

An enquiry into different forms of special school organization,
pedagogic practice and pupil discrimination

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Abstract

This study focusses upon special schools which make educational provision for children with moderate learning difficulties and the transmission of some of the criteria of competence within these organizations. The intention is to demonstrate how different school contexts generate different criteria of competence and to develop measures of these differences.

In that special educational need is now viewed in terms of the educational input required for a child to make progress, the importance of an interactional approach is outlined. On the basis of a selective review of the literature on the psychology of children with learning difficulties, an argument is advanced in support of research which acknowledges the importance of the context of children's learning. The work of Vygotsky and his followers, with its emphasis on the semiotic mediation of sociocultural factors, is discussed in detail and its place as psychological analogue of a theory of pedagogic transmission is discussed.

A model of organizational, transmission and acquisitional contexts and practices is derived from the theory and used to describe four schools and predict the teachers' pedagogic practices and pupils' acquisition, specifically in the teaching and acquiring of competences in Maths/ Science and Art.

Briefly, the basic hypothesis related boundary features of the organization, pedagogic practice and contexts of different schools to pupils' ability to recognize differences between subjects and realize these differences in subject specific talk acceptable to teachers. Further, the marking behaviours of teachers and pupils were also

considered to vary according to the organization, pedagogic practice and contexts of different schools. A study was also made of the visual presentation and meaning of displays of art work, and expectations of school differences were derived from the basic hypothesis. As a crucial test of the relation between boundary features and pupil competences, a case study of the results of a pupil changing school was carried out.

The study suggests that there is indeed a relation between forms of school organisation, pedagogic practice and discriminations of children. The implications of these findings are discussed with respect to issues in the organization and teaching in special schools.

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INTRODUCTORY COMMENTS

This thesis is concerned with the transmission of selected criteria of communicative competence within schools. See Footnote 1. The intention is to demonstrate how different contexts generate different criteria of competence and to develop measures of these differences. The schools studied were selected on the basis of the variation they displayed with respect to a number of organizational features. The organization of subjects in the curriculum, whether integrated or separate, and the organization of teachers, whether relatively autonomous or highly controlled within the school, were the features which aroused the initial interest in these schools. The implications of the organizational structure of the school for pupil talk in specified subjects became the focus of the major empirical investigation. The thesis draws on the disciplines of sociology and psychology in order to examine the relationship between individual competences and social structure. The schools chosen for study were special schools which make educational provision for children with moderate learning difficulties. Whilst the schools and the pupils were designated as special, the aspects of educational transmission that were studied also occur in mainstream settings. In order to investigate the implications

Footnote 1

The term competence is used here in the same sense as it was used by Hymes (1971):

"We have then to account for the fact that a normal child acquires knowledge of sentences, not only as grammatical, but also as appropriate. He or she acquires competence as to when to speak, when not, and as to what to talk about with whom, when, where, in what manner. In short, a child becomes able to accomplish a repertoire of speech acts, to take part in speech events, and to evaluate their accomplishment by others."

Hymes D. (1971) p.45

for pupils of different forms of school organization, a theory was required which was capable of providing an adequate model of these settings.

This thesis, then, comprises two major elements. The first reviews the literature and announces the theoretical orientation of the thesis. The second develops and applies the theory to the experimental field. A model of description of schools was derived from Basil Bernstein's model of educational transmission and this model of description was applied to the special schools studied.

Thus the process of educational transmission was explored at a variety of levels:-

Firstly, at the level of special education as a system. The system is regulated by laws which are underpinned by specific conceptualizations of special educational need. The implications of the 1981 act in terms of the relationship between the individual and his/her circumstances were explored.

Secondly, given a legal view of special educational need which allows for the existence of special schools with special pupils, the contribution of psychology to an understanding of learning difficulty was reviewed. Specific reference was made in this review to the psychological implications of socio-institutional factors in the development of the individual.

Thirdly, the actual nature of the relationship between the structure of the schools and subject specific pupil talk required investigation,

firstly at a theoretical level which allowed the integration of sociology and psychology, and secondly at a level which enabled hypotheses generated by theory to be empirically tested.

Thus having established the nature of the field of investigation, the thesis proceeds to review aspects of the psychological understanding of the relationship between the individual and social context.

Through the review of the relevant literature on the psychology of children with learning difficulties it is argued that many attempts at understanding the phenomenon of learning difficulty are frustrated by a conception of experimental investigation that does not accord sufficient prominence to social and organizational factors. The work of L.S. Vygotsky, which has inspired many current efforts to account for the social basis of learning, is seen as an important point of departure in the search for a method which is both necessary and sufficient for the purpose of understanding some of the complex issues involved in learning difficulty.

The tendency of psychology to look to individual explanations and sociology to look to societal explanations remains a major theoretical problem for research concerned to investigate a phenomenon which appears to require the insights of both disciplines, the obdurate problem being as to how these insights are to be integrated. Despite the valuable contribution of the Vygotskian school, it has failed to account for social processes with anything but the broadest of theoretical brushes and experimentally has almost entirely concentrated on face to face interactional processes. Thus whilst it has accounted for the internalized process at one level, it has failed to theorize

social structures at another. A fundamental concern of this thesis is with the influence of socio-institutional organization on individual functioning.

A review of attempts to forge and investigate links between individual functioning and social organization is undertaken from both psychological and sociological perspectives. It is argued that the theory of educational transmission being developed by Basil Bernstein has the potential to both describe and account for the influence of social factors. A model of description of schools is developed on the basis of this work and is applied to the special schools involved in the project. Following the emphasis in his model on the social division of labour and social relations within organizations, the thesis proceeds to investigate the extent to which certain crucial boundaries are distinguishable by children within institutions on the basis of the competences they practice.

The major boundary chosen for study was between discourses (subjects), and the realization of the criteria for communicative competence within these subjects became the concern. Methodological difficulties involved changes in technique and also generated new areas of interest, specifically in organizational aspects of the classroom and school practice. The transmission of teachers' evaluative criteria through their marking behaviour constituted one such study. The relaying of aspects of organizational structure through the display of works of art constituted another.

The experimental evidence obtained in these investigations was highly suggestive of the role of social organization in the schooling of

children with learning difficulties. The implications of these findings and the particular forms of organization studied are discussed in the present context of the field of special education. In that the form of the special school was the focus of the study, it is argued that it is forms that are sampled and not schools as such. These forms are placed in a more general theoretical context in order to provide a base from which to generate further research questions.

CHAPTER 1

THE RESEARCH FIELD

Introduction

The schools studied in this thesis were designated as special schools. See NOTE 1. They catered for children with moderate learning difficulties. As will be detailed in Chapter 4, these schools varied in terms of various aspects of their organization. This thesis seeks to examine some of the implications for pupils of these different forms of organization. This chapter introduces relevant aspects of the practice of special education and the psychology of learning difficulty, and argues that the study of the context of special educational provision is of greater importance now that the 1981 Education Act has been implemented.

1981 Act

"Special Education is in a stage of transition in most developed countries. The United Kingdom is no exception. The Warnock Committee Report and the 1981 Education Act are milestones and signposts reviewing progress and pointing the way to future developments."

Fish (1985) p.1

Whilst there are a myriad of changes in hand in special education at present, this chapter will review only those of direct relevance to the research reported in this thesis. The implementation of the 1981 Act will affect the way in which children are categorized and whether or not they are taught in mainstream schools. There will also be changes in the curriculum and organization of both mainstream and special schools.

NOTE 1

At the time of writing there was a possibility that at least two would close.

Just as in the Warnock report the legislation of 1981 was concerned with the extent of the problems of learning difficulty, so it was with the nature of learning difficulty, specifically as to how to conceptualize and thence statutorily define the term.

Wedell's (1981) analysis of the concepts that underly Special Educational Need drew attention to two particular dimensions. First whether the concept described or explained the problem and secondly as to whether the cause of this problem was seen as being within the child or as being of an interactive nature. As witnessed by the 1944 Education Act, there has been a tendency in the past for some practices in special education to focus their entire attention on within-child problems. The Warnock Report may be viewed as an attempt to shift the underlying ideology of special education away from this position. However, implicit in an attempt to explain Special Educational Need within an interactive framework is the requirement to question seriously the role of the system of schooling or more general environment in the creation of the child's difficulties.

Special Educational Need (S.E.N.) is now legally defined under the regulations of the 1981 Education Act. A child is defined as having a S.E.N. if he/she has a learning difficulty which "calls for Special Educational Provision (S.E.P.) to be made", where S.E.P. is something which is "additional to or otherwise different from" the provision generally made available for children of a stated age in that authority. Under this definition learning difficulty clearly becomes a relative term. What counts as a learning difficulty in one authority may not in another for any particular child, depending on provision generally made available in that authority or, indeed, school.

The formal definition of Learning Difficulty given is:-

- a. has a significantly greater difficulty in learning than the majority of children of his age.
- or b. Has a disability which either prevents or hinders him from making use of educational facilities of a kind generally provided in schools, within the area of the local authority concerned for children of his age.

Education Act 1981. D.E.S. (1981).

Arguably what counts as "significantly greater" is related to what any given authority generally provides. What is generally available in one authority may be "additional or otherwise different from" that in another. What is "significant" in one authority may not be in another. These definitions clearly allow for local implementations of national legislation. Children may therefore be legally statemented as having a Learning Difficulty in one educational authority but not necessarily be so categorized in another.

Removal of Categories

The 1981 Act removes the former categories of handicap into which children were previously classified. The notion of a continuum of need discussed in the Warnock Report was introduced at a time when there was growing recognition of the compensatory interaction of a multitude of factors that resulted in a child's perceived difficulties in school, Wedell and Lindsay (1980). This was accompanied by a decrease in professional reliance on cut off points on intelligence tests as sources of reliable and valid assessment of difficulty, Salvia & Yssledyke (1981).

The 1981 Act argues that children affect and are affected by their

surroundings, this is in general keeping with the compensatory interaction model of Wedell and Lindsay (1980). If this notion was to be seriously implemented then tests and checklists would form only part of the integrated set of information about a child that could be gathered from a variety of sources. Implicit in the whole practice would be the understanding that a learning difficulty was a teaching problem thus linking child assessment and teacher evaluation. In practice, however, it seems that the system is highly resistant to change in anything but a superficial manner.

Brennan (1985) criticizes the translation of the Warnock Report definitions of Special Education Need into the 1981 Act because of the loss of the legal concern for curriculum, facilities and teaching. This loss of concern for the working of the school has prompted many writers to suggest that the optimism which greeted the new legislation is largely undeserved. Bookbinder (1983) argues that the referral process will inevitably still be used as a way of alleviating the problems of a school rather than those of a child.

"Children will continue to be artificially assessed by people they have never seen before and emphasis will continue to be placed on the child's defects rather than on the limitations of the system to cope with them."
Bookbinder G (1983) p.7

It would appear that the tension between individual and system (school) needs is resulting in certain L.E.A.s attempting to "gag" professionals in their employ. Newell (1985) illustrated how a professional attempting to state a child's needs in terms of changes that need to be brought about in ordinary schools' practice could be obstructed at least in some L.E.A.s.

Whether a child is actually transferred to a Special School will be a

function of local policy and the nature of the mainstream provision. The 1981 act allows authorities and possibly schools to define educational difficulty with respect to the criteria of competence which they themselves accept as being of value. Special Educational Need possibly becomes a function of the child's ability to realize extremely local criteria of competence.

It is clear that focussing on the supposed deficiencies of children in isolation from their educational context will not provide an adequate account of the problems faced in schools, Wedell (1981). There is growing evidence that teachers and educational psychologists in particular are considering the benefits of a systems approach to the identification of special educational need, Gillham (1981). In part this approach involves asking how the conditions and context of schooling could be changed so as to maximize the support offered to children who are considered to have learning difficulties. This approach requires techniques which enable educational environments to be evaluated in terms of the criteria of competence that they demand of children.

Aspects of the Psychology of Children with Learning Difficulties

As this thesis is concerned with the implications of schooling for Moderate Learning Difficulty (MLD) children, it seems reasonable to ask what their special difficulties are with respect to schooling. In the course of answering this question it will become apparent that the study of contextual effects on children's learning is of fundamental importance in the process of understanding children's difficulty in learning. This then raises the question as to whether different contexts have different effects, which is the object of this thesis. This is, again, particularly important in the case of special education as there is considerable variation between schools in terms of form of organization and pedagogic practice.

The lack of external pressure on special schools from the demands of public examinations and, until very recently, the low level of return by pupils to mainstream settings has allowed special school curricula to drift in whatever direction the school, and in particular the Head choose, Tomlinson (1981).

As is the case in this study, Tomlinson observed special school Headteachers with strong charismatic personalities who had "freedom to create a school which reflects their own views and 'style'", Tomlinson (1981). Thus given the relative autonomy of Headteachers in the post 1944 Act education system, special school Headteachers appear to enjoy a position of extreme freedom of action.

"Headteachers, in this study, appeared to be much more idiosyncratic in using their powers to determine the goals, organization and curriculum of their school in accordance with their own personal style than Headteachers in ordinary schools."
Tomlinson (1981) p.225

Clearly an investigation which intends to consider the implications of different forms of organizational structure for individual children must invoke a methodology that allows for the psychological impact of social structure. This involves going beyond the understanding available within operant approaches, which fail to theorize the social context. There now follows a selective review of the relevant literature that has been concerned with the psychology of children with learning difficulties and has also attempted to account for a broader notion of contextual effects.

School Learning

Children's performance in school is evaluated in terms of its relation to school based criteria that are thought to evidence learning. To achieve in school a child has to attend to the right issues, learn various things, remember and relate these things to past memories and recall them at what are considered to be appropriate times. To perform these functions the child must not only possess certain degrees of cognitive competence, it must also know when it is appropriate to apply these competences.

It is only recently that the study of intelligence has moved to reconsider the ability to acquire and use information as a major factor.

Investigators such as Zigler and Trickett (1978) have emphasized the importance of measuring social competence as well as intellectual competence prior to classifying individuals as retarded. An individual who is academically retarded may well be able to function effectively in social settings, raising the question of what is to be gained by labelling the individual "retarded", Sternberg (1984) p.94. This raises the question as to what extent referral to a special school in

the U.K. involves assessment of social competence.

Moderate learning difficulty may be justifiably thought of, at least to some extent, as a "school disease". As Brown and French (1979) state for the range of ability IQ (50 - 80):

"Many who are diagnosed as retarded during the school years lose their school imposed label and merge into adult society".

Arguably, much of the discussion that is to follow is of what may be termed academic school intelligence and everyday intelligence is ignored.

Campione et al (1982) argue that one explanation of the "6 hour retardate" syndrome may be related to the differing demands of everyday and school life. It may be that the demands of many "real" problems are more predictable than those faced in schools. In Schank and Abelson's (1977) terms, the everyday may be more regular in its use of "scripts".

This is not to imply that all children placed in MLD schools are there by virtue of some idiosyncrasy of their cognitive functioning.

Campione and Brown (1984) outlined the history of research aimed at investigating the link between ability to learn and intelligence. Until recently the general conclusion was that of little or no link. On closer examination some of the early experiments reveal a number of flaws which may well have been responsible for obscuring the object of the research. Whilst a variety of classification systems have been used to describe these flaws, Campione et al (1982), Campione and Brown (1984), it seems that they stem from the ways in which learning itself was conceptualized and the nature of the tasks that were used to assess children.

Views of Learning

There are two levels of description of the learning process which are fundamental to this thesis, firstly as to whether the learner is thought of as being active or passive in response to environmental input, secondly as to whether learning is an individual or a social process.

Active or Passive Learner

Overton & Reese (1973) and Overton (1984) have developed an elaborate analysis of models of development. They argue that as humans cannot know reality directly, then it must be constructed or represented conceptually. The way in which researchers choose to construct or represent this reality has implications for both the way in which devices intended to collect data are designed and also how that data is interpreted. Whilst there are different levels of specificity of representation, this discussion will focus on two major models: the mechanistic model and the organicist model. Overton (1984) maintains that the "hard cores" of these rival models are not open to test.

The hard core of the mechanistic model reveals a commitment to the philosophy of Locke and Hume where stability, fixity and uniformity are considered basic, and change and organization are understood as the result of contingent or accidental factors only. Overton (1984). As Overton and Reese (1973) indicate, this hard core of assumptions leads to reductionist forms of analysis, to view development as the product of contingent antecedent factors and to represent it as additive or continuous in nature. Here then is a reactive model of man.

In organicism the developing human is seen as being capable of active transformation of external influences.

"...organism actively participates in the construction of known reality. The organism can know the world only through transformation actively imposed by the organism upon its experiences, but imposed because of its experiences. "Activity generates meaning, and meaning generates activity" [Rappoport, 1975, p.195]".
Reese (1977)

Campione and Brown (1984) argue that a disproportionate amount of early research work on learning and intelligence has been formulated using a mechanistic passive model of the child.

Arguably this statement ignores the influence of Piaget, Bandura and Hunt who, to differing degrees, posited an "active" model of child. This may, in part, be a reflection of the depth of division between the "hard cores" of research programmes in the U.S.A.

Individual versus Social Process

A fundamental distinction may be drawn between research programs that conceive of learning as an isolated individual act, and those which consider that learning is essentially a social process. Vygotsky (1978) lays considerable emphasis on the social origin of higher mental processes. Vygotsky proposed a general genetic law of cultural development.

"...specifically mediated human mental processes arise only in the course of social activity, in the process of cooperation and social intercourse. Psychological functions at first shared between two people, in particular between a child and an adult, become the internalized psychological processes of one person (in particular, though not exclusively, the child). Thus the structure of mental processes may at first be present in man's external social activity and only later become internalized as the structure of his inner mental functions. The paradigm example of this process involves language. Language arises and is structured in the process of adult-child communication. From this communicative function, an egocentric, speech-for-itself,

function differentiates and is restructured. This is then eventually internalized as the structure of inner speech or verbal thought."
Wozniak (1975b) p.27

Whereas Piagetian theory lays emphasis on the biological origins of intelligence which leads to an analysis of cognitive growth in terms of logical operations whose form is relatively unamenable to social influences. Social interaction becomes merely the occasion for acquiring knowledge content in experience.

Researchers operating from within either theoretical perspective will clearly design very different experiments. Much of the early research on the intelligence/learning work was formulated from an individualistic perspective and this in itself may have obscured vital factors in the research problem, Campione and Brown (1984).

Tasks used in Research

If learning is taken to be an active, dynamic process then it follows that the nature of what is to be learnt has some effect on the child's engagement with the task.

Campione and Brown (1984) note that in many intelligence and learning experiments the tasks used were chosen seemingly at random and that they were somewhat barren vehicles for displaying any potential the learner might have for engaging in consistent strategies. Neither did they allow the experimenters to assess individual differences in lateral transfer, the latter being somewhat surprising in view of the importance accorded to transfer and generalization in the teaching of the mentally retarded, Stokes & Baer (1977), Blackman & Lin (1984). What Gagné (1970) terms vertical transfer has attracted considerable experimental

attention within the framework of a variety of developmental stage theories, Piaget (1952), Brainerd (1978) and also in research into the nature of such hierarchies, Gagné (1970).

However, an investigation of lateral transfer in learning in schools has been until quite recently relatively ignored and yet is seen as being of importance. The work of Zeaman and House (1979) on problems of discrimination learning and, in a more cognitive framework, that of Spradlin and Van Biervliet (1980), is ultimately concerned with aspects of lateral transfer; however, its relevance to education remains unclear.

Thus not only were the tasks of questionable origin, but also the extent to which learning was transferred was largely ignored.

If an aim of research is to improve teaching then the research must focus on teaching as it happens and indeed where it happens, otherwise research results may well reflect "the science of the strange behaviour of children in strange situations with strange adults for the briefest possible periods of time", Bronfenbrenner (1977).

This places emphasis on the need to investigate learning difficulty in situ. Research needs to be undertaken in as close an approximation to school environment as possible where the "learning takes place in a social, interactive format where the experimenter (as the expert teacher) both provides relevant hints and information and models a number of essential learning mechanisms", Campione and Brown (1984) p.286.

The tasks used in research would reveal more about learning if they had some meaning for the child. That is, that there was some relation between the experimental task and the child's past learning. To understand learning in school it would seem sensible to investigate the situation the child faces in school, that is the interactional context and the tasks involved. Abstracting elements of the situation into "ideal type" experimental forms may well transform the object of study into a phenomenon that bears little relation to the research question.

Transfer of Training and Metacognition

Campione et al (1982) analyzed a large number of research reports concerned with mental retardation and intelligence, both from experimental and clinical sources.

The huge and methodologically diverse experimental field was classified into four areas:

"..we reviewed data indicating that retarded children differ from nonretarded children in the efficiency with which they carry out some elementary mental operations, in the extent of their knowledge base, in the deployment of task-appropriate strategies, and in the development of metacognition and executive control."
Campione et al (1982) p.436

The authors were concerned by the lack of attention that researchers paid to the interactions between these factors. In the light of this criticism they advanced a definition of intelligence in terms of speed of learning and/or breadth of transfer. MLD children need considerable amounts of instruction for them to acquire knowledge and even then it is not necessarily used flexibly.

A theme which emerges from much recent research relates to the ability of retarded children to use information flexibly once it has been

acquired. Studies that are concerned with children knowing when, where and how to use information once it has been acquired now form an important and rapidly expanding aspect of psychological research into the nature of learning difficulties, Sperber & McCauley (1984), Campione et al (1982), Evans (1986), Borkowski et al (1984), Brown (1978). Although the term metacognition is now widely used, it appears to mean different things in different research programmes. In the research literature the definition of the term has been refined and an important distinction drawn.

"This distinction between knowledge and the use of that knowledge also emerged in the metacognition section, where we reserved the term metacognition for knowledge about cognition (more specifically memory) and distinguished it from executive control, the process whereby we select, monitor, and generally oversee our own cognitive activities."
Campione et al (1982) p.472

Campione et al argue on the basis of current research findings that instructing metacognition did not seem to result in improvement on tasks, whereas training in self management routines did. The question of interest is as to how one investigates and makes use of such findings. Borkowski et al (1984) recommend research into the application of specific forms of what they term "metacognitive training" for modifying cognitive deficiencies in impulsive and retarded children. Certainly many schools are experimenting with forms of strategic training. Rectory Paddock School (1981) have outlined an approach to the training of control processes in children with Severe Learning Difficulties.

When reviewing conditions for transfer of training of cognitive instruction Butterfield and Ferretti (1984) conclude that quicker learning and more ready transfer results if problems are grouped according to the similarity of underlying psychological processes.

"The practical importance of these findings on transfer is their implication that classroom curricula should be organized around the psychological problems underlying the material to be taught". Butterfield and Ferretti (1984) p.331

One clear feature that many authors have noted is that retarded children consistently need direct and explicit instruction before they will show signs of behaving strategically ,Belmont and Butterfield, (1977), Campione and Brown (1984). Also it seems that retarded children abandon routines when instruction is withdrawn. That is, if transfer of trained routines is required then additional specific training is needed, Brown and Campione (1978, 1981). This problem is also addressed by aspects of the Direct Instruction method, Englemann & Carnine (1982).

There is, then, a growing body of literature which focusses the attention of educators onto the need to design programmes which explicitly train children to transfer information once it has been acquired, the central argument being that this ability underlines performances that are taken as indicators of intelligent behaviour in school. As noted above, studies of transfer of training have also made demands for changes in research methods as well as definitions of intelligent behaviour.

Experimental Evaluation of Zone of Proximal Development

By invoking a test-train-test procedure with specified and thus comparable training, Vygotsky's aim was to distinguish between the child's actual developmental level (unaided) and the child's level of potential development (assisted or trained), Campione et al (1984). That is the zone of proximal development (Vygotsky, 1978).

Studies from both the clinical and experimental literature indicate that speed and efficiency of learning and flexible use or transfer of learned information are important components of intelligence, cf. Campione et al (1982). As Brown and Ferrara (1985) argue when introducing a summary of experimental studies on the zone of proximal development:-

"The methodologies being developed to measure zones of proximal development within academic domains are ideal vehicles for uncovering learning potential in children that could be masked by their ineffectual performance on static standardized tests."
Brown & Ferrara (1985) p.285

The work that is to be summarized below all stems from the Laboratory of Human Cognition and is reported in a variety of documents, Campione & Brown (1984), Brown and Ferrara (1985), Campione et al (1984). As this thesis will attempt to demonstrate that different contexts generate different criteria of competence, the review will focus on those studies which have moved towards an analysis of instructional contexts in the investigation of learning difficulty.

There are certain common factors to all the experiments involved. All involved children who performed poorly when unaided on tests of inductive reasoning. The children taught were taught forms of problem solution which required the application of rules or principles which had to be discerned from materials given. Once the children had achieved independent unassisted mastery they were given transfer problems to solve. These were of three forms:-

1. Maintenance items - novel exemplars of original problem types.
 2. Near transfer items - novel combinations of original rules or principles.
 3. Far transfer items - use of familiar rule with a new but related one.
- Campione et al (1984)

As outlined above, an analysis of hints to be given by instructors was conducted and these were progressively applied until a child was able to solve the problem. Thus it was considered possible to formulate learning efficiency in terms of hints given.

This does differ from the measure of amount of improvement made as a result of instruction which was originally formulated by Vygotsky (1978). Campione et al (1984) argue that using number of hints given as the measure is in fact preferable because of its direct relation to some future formulation of instructional need. This measure of number of hints can be used both on the original tasks and on the transfer items.

The method of deriving prompts or hints in these studies is not clear and is open to criticism. In that this research group has attempted to objectify the possible range of supportive actions of tutors, it has imposed considerable limitations on the dynamics of the learning situations it has studied. The data produced using this method must therefore be treated with some caution, particularly when viewed from the perspective of ecological validity.

Studies using series completion tasks, Ferrara et al (1983) and Progressive Matrices, Campione et al (1985) were conducted. The authors conducted analyses which examined the relationship between degree of transfer and speed of learning. These initial studies were conducted on average (mean IQ 101) and high (mean IQ 122) rated children.

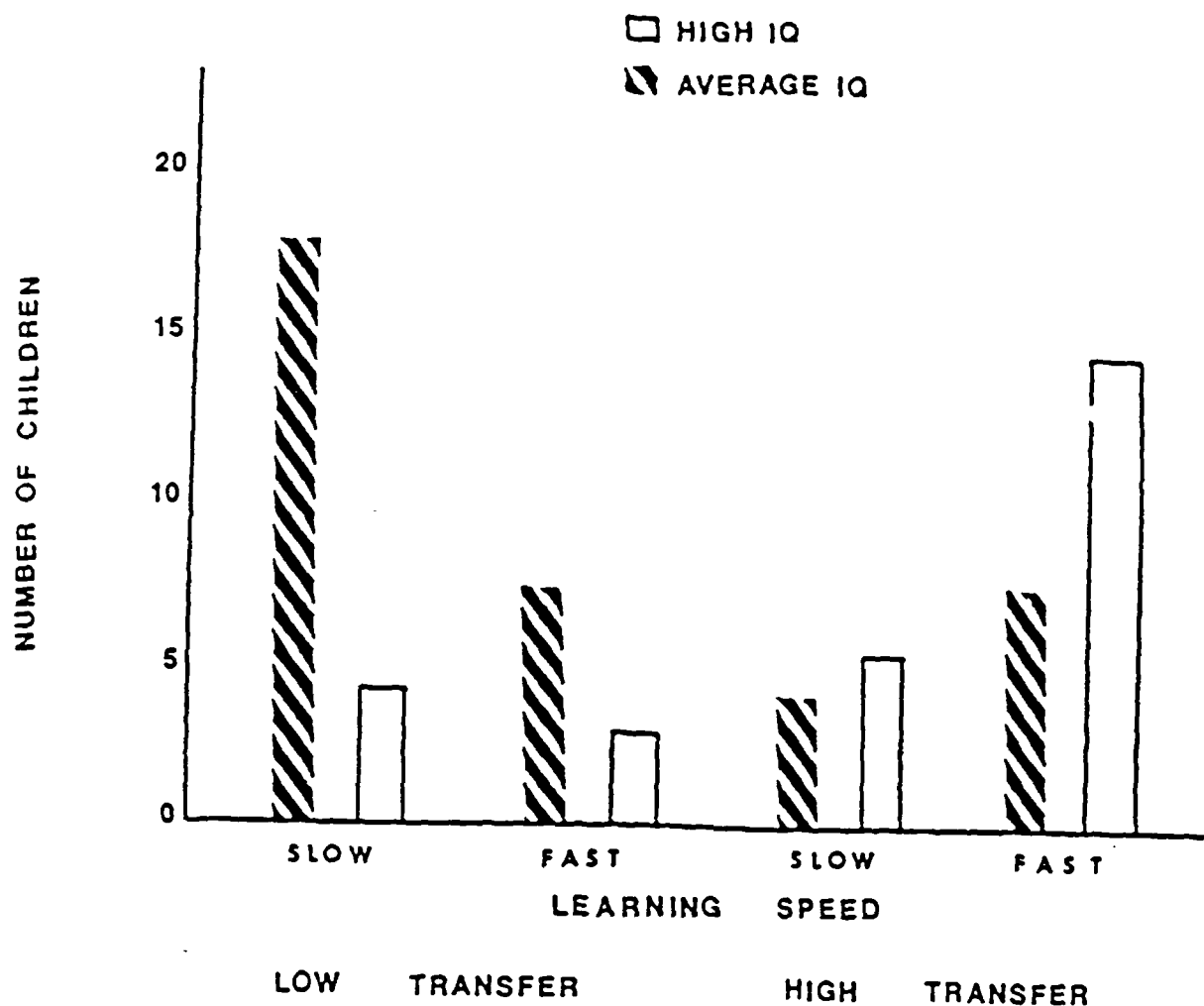
"Whilst "most of the average-IQ children transferred relatively poorly and most of the high-IQ children transferred relatively well. However, a significant number of children fit neither of these profiles...Thus, from this fairly wide range of "normal"-ability children (IQ range 88-150) a number of different learning profiles have emerged, including (1) slow learners, narrow transferrers, low IQ (slow); (2) fast learners, wide transferrers, high IQ (fast); (3) fast learners, narrow transferrers (context-bound); (4) slow learners, wide

transferrers (reflective); and (5) fast learners, wide transferrers, low IQ."
Brown & Ferrara (1985) p. 290-292. See Figure 1

All of these findings would have been masked by static IQ measures.

Figure 1

Children classified by speed of learning, degree of transfer and IQ,
from Brown and Ferrara (1985) p.291



These procedures are only now being applied to the "mildly retarded" population; Brown and Ferrara (1985) predict that

"On the basis of our initial pilot data we expect to find less stable profiles for the aberrant children than we have found with children from within the normal IQ range."
Brown & Ferrara (1985) p.295

Campione et al (1984) compared the performance of mildly retarded (mean IQ=72) and non-retarded (mean IQ=118) children on a Progressive Matrices study. These groups were matched on mental age (10.5) in order to investigate whether ability-related differences in learning and/or transfer would be found when the children started at the same equivalent level (mental age and task pre-test). No differences were noted in the initial learning phase, but the lower IQ group were significantly worse on maintenance tasks. The difference increased on the transfer items.

Campione et al (1984) conclude that the increasing complexity of the context in which the problems were embedded increased the importance of problem detection processes. These progressive matrix problems were presented in blocked format during the initial learning phase, in random order with novel exemplars in the maintenance phase and interspersed with transfer problems in the transfer phase. Campione et al (1984) conclude:-

"One factor underlying the retarded child's failure to use information flexibly is the child's difficulty in identifying novel exemplars of known problem types that are not clearly marked by context".

Campione et al (1984) p.85

It is also argued that children's profiles on speed of learning and transfer may vary across domains:

"It is quite conceivable for a child with a narrow zone of proximal development in one domain to have a broad zone within another. Interest, knowledge, and ability all contribute to the learning potential shown by any one child in any one domain."

Brown et al (1983) in Brown & Ferrara (1985) p.297

Whilst recognizing that all thinking is to some extent context bound, the measure of transfer is in a sense a degree of tightness of binding measure.

"The less mature, less experienced, less intelligent may suffer from a greater degree of contextual binding, although even the expert is bound by contextual constraint to some degree."
Brown, (1982) in Brown & Ferrara (1985) p.298

Data from these and other studies reviewed by Campione et al (1984) indicate that

"Development, then, is the gradual internalization of regulatory skills first experienced by the child in social settings (Vygotsky, 1978). Via repeated experience with experts who criticize, evaluate, and extend the limits of his or her experience, the child develops skills of self-regulation. The development of a battery of such auto-critical skills (Binet, 1911) is essential for intelligent function."
Campione et al (1982) p.472

These statements tacitly announce the importance of cross-cultural studies in intelligent behaviour. The question raised is as to how one defines culture/context. If transfer across contexts/cultures is an important factor in intelligent functioning, it is important not only to quantify the amount of instruction but also the nature of the contexts between which transfer of learned information is studied.

There appears to be strong evidence supporting the view that speed or efficiency of learning and breadth of transfer are central to any notion of intelligence and constitute important distinctions between those who are seen as being able to cope in mainstream education and those who are deemed in need of special education, the focus on executive decision-making being of central importance.

If these insights are to be realistically applied in schools, the social/cultural sites of schools themselves must be the location for transfer of training and executive decision making studies. As was outlined in Chapter 1, the 1981 Act, through its suggestions concerning the integration of children with learning difficulties into mainstream schools, is making demands for transfer of training from special school

sites to mainstream school sites. Many of the children who attend special schools seem to have difficulties in transferring information in such a way. A consideration of the difficulties of transferring information between schools requires as basic data some way of understanding the nature of the respective school contexts. Additionally the demands of schools may differ in terms of the evaluative criteria by which children are judged. The transfer of training research raises questions as to how we characterize schools in terms of the demands they make on children and whether they are making demands that parallel one another.

CHAPTER 2

VYGOTSKIAN PERSPECTIVES

Introduction

It is the intention of this chapter to discuss relevant elements of the research literature which have attempted to analyse learning and learning difficulty in a social context. At one time researchers sought answers to research questions about learning difficulty conceptualized as a within-child factor. The views presented above have highlighted the inadequacy of such models within the currently applied legal, psychological and sociological paradigms. The Warnock report and to a lesser extent the 1981 Act invites an analysis of learning difficulty that considers a child's difficulty with respect to its circumstances. Serious criticisms have been raised by some psychologists of research initiatives in the field of school learning that do not acknowledge that it is, at least in part, a social process. These criticisms have prompted a resurgence of interest in the psychology of L.S. Vygotsky. The review of recent psychological investigations of learning difficulty introduced elements of the Vygotskian approach. A more extensive review of the implications of his work is now presented along with an analysis of its shortcomings.

Vygotsky died in 1934 and for largely political reasons much of his work remained untranslated until very recently. Wertsch (1979) and Sutton (1985) have commented on distortions that have occurred in the meaning of Vygotsky's work because of poor translation from Russian into English. They both comment on the misconceptions that have arisen because of the translation given for 'Myshlenie i Rech', originally

"Thought and Language" (Vygotsky (1962)), instead of the more accurate "Thinking and Speech". The title "Thought and Language" implies a concern with language systems themselves rather than emphasizing the social activity of speech or speaking as part of ongoing human activity as in "Thinking and speech".

Indeed Sutton (1985) commenting on the attempt by Brown and French (1979) to incorporate Vygotskian approaches to assessment and learning into implicit American models of development, retardation and assessment, suggests that the task may be more difficult than is immediately apparent.

"The problem....for Anglo-Saxon psychologists and educators, therefore is not solely one of linguistic translation but also, and perhaps more fundamentally, of the transition from one society and ideology to another".
Sutton (1983) p.33

Wertsch (1985) and Johnson-Laird (1986) also refer to the nature of the intellectual milieu in which Vygotsky was working. Vygotsky was attempting to construct a radical view of psychology in post-revolutionary Russia. Not only were there ideological demands to be met but also the state of understanding in linguistics, psychology and anthropology in particular had not benefited from the tremendous advances made in the later part of the 20th century.

There are therefore dangers in attempting to directly apply translations of Vygotsky's work into practice in current research. Rather Vygotsky's work may be seen as a rich source of ideas and insights which require modification and extension.

Wertsch (1985) argues that it is only by identifying general unifying themes in Vygotsky's work that one can understand his approach to specific issues.

He offers three themes as the core of Vygotsky's theoretical framework:-

- "1. a reliance on a genetic or developmental method
2. the claim that higher mental processes have their origin in social processes
3. the claim that mental processes can be understood only if we understand the tools and signs that mediate them."

Wertsch (1985) p16

Vygotsky, as Sutton (1980a) has argued, was a developmental stage theorist, with the child progressing through socially activated stages.

"An immediate implication of this stage system is that the quality of the child's social milieu will be a governing factor in the rate of the developmental process of most children, indeed that the very structure and extent of the stage system is a question of the historical development of the child's culture."
Sutton (1980a) p.205

However, as Cole et al (1978) point out in the introduction to the English translation of Vygotsky's "Mind in Society", there are two senses of "developmental" which apply in an analysis of the overall theoretical framework. Vygotsky's method was developmental and he also derived a developmental theory. Indeed it is as a methodologist of psychology that Davydov and Radzikhovskii (1985) see Vygotsky as being far ahead of his time. It was for this very reason that he had practical difficulty in implementing his theoretical insights into empirical procedures; the understandings required in psychology were not available.

- "1. Human mental processes must be studied by using a genetic analysis that examines the origins of these processes and transitions that lead up to their later form.
2. The genesis of human mental processes involves qualitative revolutionary changes as well as evolutionary changes.
3. Genetic progression and transitions are defined in terms of mediational means (tools and signs).

4. Several genetic domains (phylogenesis, sociocultural history, ontogenesis and microgenesis) must be examined in order to produce a complete and accurate account of human mental processes.
 5. Different forces of development, each with its own set of explanatory principles, operate in the different genetic domains."
- Wertsch (1985) p.56

Whilst Vygotsky theorizes a relationship of mutual transformation of natural and cultural forces of development, his empirical research failed to explore this issue.

When considering the social/cultural origins of higher mental functions it is then of importance to distinguish between the methods advocated by Vygotsky and those he actually used. A problem associated with that of the implementation of methodology is as to the nature of the theory that describes or accounts for social factors. Vygotsky attempted to provide a non-reductionist account of social processes in cognitive development. He developed the notion of social processes being mediated by psychological tools and then internalized. A crucial point in relation to this project is however as to how "social" is described. Vygotsky provides an account of the social origins of higher mental processes with his general genetic law of cultural development referred to in chapter 1. He also emphasizes the importance of this account for empirical study.

"We shall place this transition from a social influence outside the individual to a social influence within the individual at the centre of our research and try to elucidate the most important moments from which it arises."

Vygotsky (1960) p.116

However, as Wertsch (1985) reveals in his extended discussion of units of analysis employed in the study of the internalization of social factors mediated by psychological tools, Vygotsky fails to fully theorize the nature of social factors. Just as Mead (1934) who concentrated on social factors in face to face social interaction, Vygotsky tended to ignore wider societal or social institutional principles. As Bruner (1962) noted, both Vygotsky and Mead tended to deal with social processes in small group interaction in terms of interpersonal dynamics and communication. The issue as to whether wider societal factors achieve their influence through these practices and therefore do not in themselves require attention will be analysed later. It is important to note here that Vygotsky at one time acknowledged the operation of societal or social institutional forces and yet, as Wertsch (1985) shows, did not fully develop a place for them in his empirical work.

"Vygotsky said very little about the principles that deal with social institutional phenomena."
Wertsch (1985) p.60

Thus in the ongoing discussion of his work, it is important to note that when Vygotsky analyses social processes he is only applying a partial description of them. This criticism has a fundamental effect on the structure of this study and its implications will be developed after the relevant aspects of Vygotsky's thesis have been discussed in sufficient detail.

This thesis requires a model that will generate definitions of the situations in which children learn. Vygotsky advanced the notion, referred to in Chapter 1, of Zone of Proximal Development.

".. the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers."

Vygotsky (1978) p.86

There is also a requirement here for a theory which in some way allows for the internalization of social processes and for an understanding of the mechanisms through and by which these factors are internalized. The limitations of descriptions of zones of proximal development and other aspects of his theories will constitute points of departure for theoretical extension.

As has been sketched so far, Vygotsky was concerned to use a genetic/developmental analysis to understand how higher mental functions are mediated, internalized results of social interaction. The question that focussed a great deal of Vygotsky's attention was the nature of the mediational means of internalization of social process. This led him to concentrate on the role of speech.

"According to Vygotsky with the introduction of speech into the developmental picture the nature of thinking is fundamentally changed... When a process becomes mediated, this does not simply mean that the same mental or practical process is carried out more efficiently or faster; rather it means that this process is restructured into something qualitatively different."

Levina (1968) p.280

For Vygotsky, speech was an important psychological tool, which was at one time a social and cultural element, but also served to mediate social processes in the process of internalization. Such psychological tools not only function externally/socially, they mediate or regulate internally the action of mental processes. As Cole et al (1978) note

in the conclusion of their introduction to "Mind in Society":-

"It is important to keep in mind that Vygotsky was not a stimulus response learning theorist and did not intend his idea of mediated behaviour to be thought of in this context. What he did intend to convey by this notion was that in higher forms of human behaviour, the individual actively modifies the stimulus situation as a part of the process of responding."
Cole et al (1978) p.13/14

Wertsch (1985) summarizes the four major points that are the foundation of Vygotsky's account of internalization.

- "(1) Internalization is not a process of copying external reality on a pre-existing internal plane rather it is a process wherein an internal plane of consciousness is formed.
- (2) The external reality at issue is a social interactional one.
- (3) The specific mechanism at issue is the mastery of external sign forms.
- (4) The internal plane of consciousness takes on a "quasi-social" nature because of its origins."

Wertsch (1985) p.66-7

These points clearly distinguish between the approaches of Piaget and Vygotsky when they come to interpret "egocentric speech". Whereas Piaget saw egocentric speech as a temporary phenomenon which eventually disappeared as the child developed, Vygotsky argued that as egocentric speech became internalized it took on the function of self regulation. For Vygotsky egocentric speech played an important planning and regulation role much as social speech can be used to plan with and regulate others. Through an analysis of their planning functions Levina (1968) sketched the development from social to egocentric to inner speech. This development then illustrates the process of internalization of social processes mediated by a sign system, specifically, language. Here it is impossible to reduce an explanation of social processes to principles that apply to individual psychological

phenomena or to explain individual psychological phenomena as direct, internalized copies of social interactional processes. There are dialectical relations between social and individual levels which allow for levels of explanation without direct reduction of one to another.

The experiments referred to in Chapter 1 conducted by Campione and Brown and their research group investigated this transition from the social to the individual in aspects of learning. In these experiments language (instruction) mediates the adult guidance that is given to children. The experiments investigate the zones of proximal development of children in small group settings and provide indications of the learning potential of the children involved. In short, these experiments investigate the mediational function of one sign system in tightly defined social settings.

Many such experiments have been conducted in the West since the publication of *Mind and Society* in 1978 (i.e. Rogoff and Wertsch (1984)) and they have served two purposes: on the one hand they provide information concerning children's intellectual abilities (Brown & French, 1979; Brown and Ferrara, 1985) and on the other they allow for the evaluation of instructional practices (Swann, 1978; Wood, Wood and Middleton, 1978). As Sutton (1983) notes, there is a growing sense that the zone of proximal development "has more direct significance for the dynamics of mental development and school achievement than does the present level of children's development" as viewed through either static measures of intelligence or investigations of learning that do not account for social actions. Sutton (1980b), Suddaby (1984) and Stringer (1984) have noted the impact that Vygotskian methods have made on special educational provision in the U.S.S.R. although detailed evaluation reports are not yet available; they make claim for "major

advances", Sutton (1983).

There remain, however, as Wertsch (1985) has shown, major conceptual issues to be resolved within Vygotsky's notion of zone of proximal development. Vygotsky failed to provide an adequate account of the internal dynamic of development. Although Sutton (1980a) proposed a scheme based on the mathematical model of catastrophe theory, this must be regarded as preliminary if only by nature of its brevity.

Vygotskian methods also need to allow for our present insights into the complexity of social and cognitive development in infancy.

The major issue lies in the field of formulating a theoretical perspective which adequately allows for social institutional factors.

"Most of Vygotsky's discussion of this zone involves interpsychological processes. In certain respects, however, his comments bear on social institutional phenomena as well. For example he argued that the "process of instruction that takes place before school age is essentially different from the process of school instruction". Here he apparently viewed certain social institutional contexts as bearing on interpsychological processes. The influence in this case grows from the decontextualization of mediational means. Vygotsky's general point was that sociohistorical processes at the social institutional level influence interpsychological functioning in the zone of proximal development."

Wertsch (1985) p.74

Here, then, is the crux of the problem. This thesis specifically intends to investigate the implications of factors at the school social institutional level for aspects of the intrapsychological functioning of pupils. Whilst the Vygotskian framework allows for an adequate description of the face to face social factors this thesis requires analysis at the institutional level and elucidation of the means of mediations of these factors to the individual.

Means of Mediation

The notion of psychological tool as developed by Vygotsky has itself been the subject of considerable discussion and extension. Vygotsky emphasized that meaning was the unit of analysis of mental life, Vygotsky (1962). Sign meaning and specifically word meaning became central constructs in his analysis of the process of internalization.

Wertsch (1985) sketches the evolution of Vygotsky's early view of psychological tools into a semiotically oriented account "placing greater and greater emphasis on the meaningful and communicative nature of signs". Bruner (1984) claims that this process was influenced by Vygotsky's association with linguists and literary intellectuals such as Bahktin, Jakobson and Voloshinov.¹

Wertsch (1979) drew attention to Vygotsky's view of speech as being inextricably part of ongoing human activity. He drew the analogy with Wittgenstein's notion of a "language game" in which language "is part of an activity or a form of life" (Wittgenstein, 1972 p.11).

Wittgenstein (1972) argued that linguistic communication was by its very nature incomplete and that utterances only attained meaning when considered as being embedded in more inclusive patterns of human interaction. There are distinct parallels here with the dialectical philosophy of Voloshinov (1973) for whom experience, consciousness, and individuality are only possible through the medium of the sign

Note 1. Bahktin and Voloshinov are thought to have been one and the same person writing under different names. Morson G.S. (Ed) (1986).

which itself "emerges only in the process of interaction between one individual consciousness and another ... the sign and its social situation are inextricably fused" so that "consciousness becomes consciousness only in the process of interaction", Voloshinov (1973), p.11,37,48,74.

Voloshinov's theory is radically social in that the individual is not a primary category of analysis, rather the individual is constituted through a social medium. Walkerdine (1984) and Henriques et al (1984) have recently developed these ideas in a re-examination of theories of subjectivity and individual consciousness. They propose a form of semiotic analysis which stresses the inadequacy of attempts to "graft on context rather than being able to theorize it as a critical feature of signification itself". Walkerdine (1982) p.131.

Piaget does indeed have a dialectical approach to the relationship of the individual and the context, but it is at the opposite end of a continuum of dialectical approaches to that taken by Voloshinov and Vygotsky. Piaget lays emphasis on the biological features of the environment whilst minimizing the social/cultural ones, whereas the emphasis is on the social for Voloshinov. Language, which is the most important sign "vehicle" for the social in Voloshinov's and Vygotsky's framework, merely reflects underlying cognitive competence for Piaget.

The term "language" for Vygotsky not only meant something different for Piaget, its role in cognitive development was entirely different. Language for Vygotsky was an important psychological tool with a capacity to transform mental functioning. Psychological tools were seen as being essentially social on two levels: firstly in that tools

such as forms of language, systems of counting, artistic symbols, are themselves the products of sociocultural evolution and secondly that these tools are used in the "language games" of face to face social communication. Wertsch (1985a).

Units of Analysis

An aspect of Vygotsky's work that has been subject to considerable development has been concerned with the question of the units of analysis to be used in the study of the semiotic mediation of social processes. Vygotsky (1962) proposed word meaning as to the unit of analysis.

"Words play a central part not only in the development of thought but in the historical growth of consciousness as a whole. A word is a microcosm of human consciousness." Vygotsky (1962) p.153

Vygotsky was apparently criticized whilst still alive for employing word meaning as a unit of analysis because it was seen to lack sufficient coherence with the activity-oriented approach considered more ideologically appropriate at the time, Davydov and Radzikhovskii, (1985) p.57. Specifically, the analysis of word meaning was seen as being idealist and as deviating from the materialist conception of psychology which was seen as being ideologically sound in a marxist state. Recent studies influenced by the work of Leonte'ev (1981) have contributed to a theory of activity psychology compatible with Vygotsky's work and in the development of other units of analysis i.e. Wertsch, Minick and Arns (1984). All these approaches attempt to resolve Vygotsky's supposed failure to fulfil his own requirements for a unit of analysis, i.e. that it serve as a microcosm of the dynamic interfunctional relationships that define consciousness (Wertsch, 1985).

These reforming proposals relate to the levels of analysis identifiable in Leont'ev's theory of activity. Each level of activity has an associated unit of analysis. There are three levels of analysis which have been summarized schematically:

Level of activity		Unit of analysis
Activity	-	Motive
Action	-	Goal
Operation	-	Conditions

after Wersch, Minick and Arns (1984)

As Wertsch et al (1984) pointed out, the use of the term activity must be distinguished from its use in general theory of activity.

"A unit of activity refers to an actual, identifiable activity as opposed to a generic notion of human activity, and a particular level of analysis as opposed to the more general theory that encompasses all levels of analysis."
Wertsch, Minick & Arns (1984) p.154.

One particular unit of activity is of central interest in this thesis - that of instruction or formal schooling. The unit of analysis here becomes the motive for the activity.

"For example, the institution of formal schooling is organized in such a way that learning is the overriding "motive", to use Leontiev's term. This means that the students are encouraged to take over responsibility for tasks even when they are not yet able to perform them correctly. Because the emphasis on learning and independent functioning predominates over the emphasis on flawless task performance, errors are expected and sometimes even encouraged."
ibid p.155

Whilst agreeing with the general formulation of activity psychology, it

is argued here that "motive" is perhaps an inappropriate term for the unit of analysis of activities. Motive is a term more appropriately applied to individuals than institutions. Institutions embody intentions or aims rather than motives. The term "intention" will be used in this thesis.

In that the purpose of this thesis is to study the implications of different forms of school organization, the ultimate unit of analysis must be the intentions or aims (motives) that underly these forms of organization.

These changes may be seen as part of the development of Vygotsky's ideas, that is to create a system of analysis of the process of internalization of mediated social and cultural actions. As noted above, there has been a conspicuous dearth of analysis in this framework which accounts for anything but the immediate social circumstances of a working dyad or triad. The problem that remains is as to the nature of a system of situation definitions. What distinguishes one form of activity from another and how is this measured? Wertsch, Minick and Arns (1984) showed how differential experience with various activity settings resulted in dissimilar interpretations of an experimental situation. The problem of the creation of context in problem solving situations has been formulated in many ways, for example in Bruner (1975) through the creation of intersubjectivity, or Nelson (1981) through the use of scripts which are tied to activities. That activities are always embedded in contexts has been recognized and specified in terms of "episodes", Harre and Secord, (1972), "settings", Barker (1965) and "frames", Goffman (1974).

The problem raised by the Laboratory of Comparative Human Cognition (1982) with some approaches in this tradition concerns the relationship between the cognitive psychological "internal" schematization and the outside influences.

Rumelhart and Norman (1981) developed schema theory which attempts to account for the representation and application of human knowledge. In their theory and the group of theories closely allied to it (cf. Schank and Abelson (1977)), knowledge is represented as schemata, a model which is derived from recent advances in electronic computing. Indeed Johnson-Laird (1986) criticizes modern Vygotskians for not coming to terms with the impact of computation on conceptions of the mind.

"They must offer an explicit theory that can be modelled in a computer program in the same way that one can model, say, the economy, or the weather, or quantum electrodynamics. No Marxist psychology is likely to meet this demand, and Vygotsky's grand theory will probably not be followed by another in the foreseeable future."

Johnson-Laird (1986) p.880

This suggestion raises the interesting problem as to how to model contexts as they are incorporated into schemata!

Anderson (1980) summarized recent work on schema theory and suggested that humans appear to have a powerful ability to build schemas from correlations detected in stimulus events. Whilst he recognizes the inadequacy inherent in the stereotypical nature of schema abstraction and that schemas might best be described as "quick and dirty" methods of thinking, he indicates their value in some circumstances.

"Some schemas serve to help us recognize objects, make judgments, comprehend stories and otherwise act in the world.

Schemas are important knowledge structures that enable us to deal effectively with the information processing demands of a large and complex world. They serve to extract and categorize clusters of experiences in that world."
Anderson (1980) p.158

He also notes that in different circumstances an individual may categorize the world in different ways.

"Subject's classification behaviour varies not only with the properties of an object but also with the context in which the object is imagined or presented."
Anderson (1980) p.137

The approach is therefore based on the belief that by studying individuals' developing ability to acquire knowledge from or produce discourse, one is investigating fundamental characteristics of how individuals acquire, represent and construct extended knowledge structures.

In that schema theory is context specific, it accords well with Wason and Johnson-Laird's (1972) understanding of the place of logical models in practical reasoning.

"schemata play a central role in all of our reasoning processes. Most of the reasoning we do apparently does not involve the application of general purpose reasoning skills. Rather, it seems that most of our reasoning ability is tied to particular bodies of knowledge."
Rumelhart (1980) p.55

While these theories may well be sufficient for treating internal and external structures as independent entities, a theory is required which posits their dynamic mutual influence.

Frederiksen (1981) notes the need for an interactive theory of inference when considering pre-school children's conversations. He contrasts ethnographic studies of conversational interactions with the

work of cognitive psychologists on schema based theories.

The essential difference between the two approaches is that ethnographers ask "where do frames come from?" while cognitive psychologists assume that frames are already given and ask "how are frames used in comprehending tasks?"

The inadequacies of both approaches in isolation are clear.

Using the language of schema theory, if children come to contexts with different schemas for events, i.e. story telling, they will proceed to act in different ways. In a sense they locate different activity settings by virtue of their different schemas which may well have been acquired through different sociocultural experiences. The pertinent question then becomes focussed on how particular contexts "trigger off" particular schemas. Schema theory does not provide the requisite detail here nor does it provide a method for testing its own validity.

There is no necessary conflict between a schema based theory and a Vygotskian framework in that a schema based form of representation of knowledge may be the result of the internalization process of the semiotically mediated social factors.

Hundeide (1985) has shown in a study of the tacit background of children's judgements how participants in an activity in part create the setting. These "taken for granted background expectancies" reflect in part the sociocultural experience that the individual brings to the situation.

"..one needs a framework that takes into account the historical and cultural basis of individual minds: the collective institutionalized knowledge and routines, categorization of reality with its typifications, world view, normative expectations as to how people, situations, and the world are and should be, and so forth. All this is tacit knowledge that has its origin beyond the individual, and it is this sociocultural basis that forms the interpretive background of our individual minds."

Hundeide (1985) p.311

There is a certain gentle irony here in that this statement reflects the point of departure of much sociological work.

Clearly there are many unresolved issues in the extension of Vygotsky's ideas. The most important issue in this study is that of accounting for social institutional factors in comparative study. The use of the units of analysis suggested above seems to offer a potentially rich source. However, the theory has not provided a method for describing motives or more importantly the principles which regulate motives. Motives must change with time, therefore static descriptions are as inappropriate for the motives of instruction/schooling as they are for individual functioning.

Vygotsky offers a dynamic and wide-ranging model that explains the process of internalization of semiotically mediated social forces. In the small scale, the way in which adults "scaffold" the child's extension of current skills and knowledge to a higher level of competence has been explored and explained using this framework Rogoff & Gardner (1984), Wood (1980), Wood, Bruner and Ross (1976) Wood, Wood and Middleton (1978). Of critical importance here is the understanding of the relation between the social conditions of learning and development. Through the organization of learning, adults are creating the possibilities for stages of development rather

than the possibilities being defined within the biology of the child. Revealing as these studies are, they are still liable to Wertsch's criticism of their lack of account of social institutional factors. The symbolic interactionist resolution of this problem to state that macro-factors are represented in micro-interaction is not without its criticisms, Mead (1934). However, it is interesting to note that whilst Vygotsky and Mead are equated at this level of debate, it is Vygotsky who acknowledges the inadequacy of this form of reductionism.

Language

A study which intends to examine the consequences of school institutional factors then, if it is to accord with and extend a Vygotskian understanding, must attempt to describe the principles which regulate the activities of the schools involved. It is also clear that of all the culturally available sign systems open to study, language is the most pervasive and the one which has received the most attention.

An increasing number of studies have followed the early lead given by Barnes et al (1971) in investigating the special nature of language use in schools.

"In fact, one of the primary roles of school is the transmission of the ability to control a set of formal registers, both spoken and written. This constitutes an expanding communicative competence in the educational domain - an ability to use language in ways generally not learned elsewhere in our society." Destefano (1984) p.155

In the teaching of reading in schools there is the growing recognition that children have to learn to "talk like a book". However, despite the claims made concerning the need to know the language of subjects, Gillham (1986), it seems there is remarkably little data available relating to these phenomena in special schools.

"How do teachers 'mediate' between the everyday language of their pupils and the language they consider proper and necessary to their subject? How far do they modify the subject-specific wording of their exposition or its level of abstraction when teaching younger or less able pupils, or when switching from lecture to discussion? Is pupils' own use of subject-language a measure of their socialization into the particular academic sub-culture? These are all questions for which very little information is available."
Edwards (1980a) p.33

One of Barnes et al's (1971) main arguments was that teachers' talk in specific subjects can act as a barrier to communication in the classroom. The "language of secondary education" comprises a number of subject specific criteria as well as criteria which obtain in schools and not necessarily in everyday life.

"Schools and classrooms are pervasive language environments. Pupils are dealing with language for most of the day: with the spoken language of the teacher or of other pupils, and with the written language of books. There is a sense in which, in our culture, teaching is talking."
Stubbs (1976) p.12

Stubbs' (1976) suggestion is that the subject specific "language" of an academic subject may have an intellectual function in that it enables the specialist to communicate the details of the discipline in a way that other forms cannot accommodate. Whether this is true or not is not at issue here, the concern is with the nature of the principles that regulate legitimate communication in specific contexts.

Children, if they are to appear competent, must acquire the rules of not only what counts as valid content but also what counts as valid form. It is important at this point to clarify what is meant by the term competence. Chomsky's (1965) notion of linguistic competence tends to focus on linguistic forms within grammatical analysis and ignores the social processes of conversation. The distinction between

linguistic and communicative competence which Hymes (1972) derived is of relevance in this discussion. Linguistic competence refers to the speaker's ability to produce grammatically correct sentences.

Communicative competence refers to the ability to select from the possibilities governed by a speaker's linguistic competence those forms which conform to the social rules of a particular situation.

Cook Gumperz (1981) has argued that it is not only teachers who may see certain forms of information as valid and/or be able to interpret messages.

"for children, their interpretations of the meaning of others' utterances rely upon their accumulated situational knowledge as much as on their linguistic knowledge; on their social experience as much as on their growing linguistic ability."
Cook Gumperz (1981) p.48

This is clearly shown in Michaels' (1981) study of childrens' narrative styles and their differential access to literacy. She compared the interactions of black and white children engaged in acts of story telling with their teachers. In some cases the teacher appeared to be the misinterpreter:-

"With many of the black children, on the other hand, the teacher appeared to have difficulty discerning the topic of discourse and predicting where the talk was going. The questions were often mistimed, stopping the child mid clause. Moreover, her questions were often thematically inappropriate and seemed to throw the child off balance interrupting his or her train of thought."
Michaels (1981) p.431

The child also had difficulty in interpreting the teacher's instructions. Michaels attributed this problem, not to prejudice or incompetence, but to general differences in ethnic and communicative background which operate at the level of automatic unconscious processes based on a "mismatch between teacher's and child's prosodic signalling system and narrative schemata", Michaels (1981) p.440.

That educational success can be seen as requiring some facility in deciphering and eventually participating in various forms of academic discourse is perhaps most graphically illustrated by Brice Heath's ethnographic study of three communities in the U.S.A.

Brice Heath's study of children attempting to make the transition between home and school ways of speaking revealed the extent to which not only exposure to story telling but also the particular form, content and functions which stories assume in particular cultural contexts are crucial factors, Brice Heath (1983).

There is therefore ample evidence that children may be differentially placed by virtue of their sociocultural history in the discourse of schools, and that being able to realize the linguistic criteria of competence in schools constitutes an important factor in the child's perceived ability in the school.

When these findings are reflected in the field of special schooling in England a problem worthy of investigation begins to emerge.

In that the 1981 Act relates special educational need to the provision made available for a child with learning difficulties it would seem important to ask whether all schools make the same demands, particularly when integration is being considered. There is evidence from a wide variety of studies that schooling is instrumental in the construction of a particular form of knowledge that is relevant to a particular set of socially valued activities. Just as schooling constructs its own knowledge schemes there is evidence that different cultures foster the acquisition of different knowledge, skills and rules of behaviour.

Importantly also that knowledge acquired in one circumstance may not necessarily be used in another. Olson (1977) reviews the evidence for these factors and asks questions relevant to this study.

"If different forms of activity result in the construction of somewhat different representations of reality, what about the different means of instruction that may be found in schools? I shall introduce this question by suggesting that different means are means to different goals, not optional routes to the same goal."

Olson (1977) p.69

If schemata are constructed in a way which reflects the "inextricable fusion of text with context" then translation of the knowledge appropriate to one kind of activity or language into that appropriate to a second kind of activity alters that knowledge Olson (1977). If it is the case that particular means of instruction affects the knowledge acquired then the organization of instruction becomes a factor in the considerations of integrating children from special schools into mainstream schools. Schools and classrooms in this sense may be regarded as socio-cultural institutions each with their own demands in terms of competence in discourse. That is if the language, in the widest sense of the term, of the classroom is specialized in a way it may be regarded as a powerful socializing force into a particular educational culture.

Following Brown's (1978) suggestion that "it might prove instructive to think of schools as a miniculture within which certain specialized sets of skills are emphasized and refined" p.149, the ability to comprehend and retain information couched in increasingly decontextualized and formalized language is a fundamental criteria of competence required within these cultures. Yet as Donahue (1985) notes, there are virtually no studies that examine the implications of the linguistic and social difficulties experienced by children with special

educational needs in the acquisition of discourse rules in the classroom. Donahue proceeds to argue that in the context of attempts at mainstreaming, differential linguistic demands of the special and mainstream situation could prove to be a major obstacle.

"Clearly both regular education and special education teachers need to become aware of and make adjustments for the discrepancies between communicative norms in the mainstream classroom versus the special education setting."
Donahue (1985) p.118

Cromer (1976) and Slobin (1979) both suggest that the acquisition of many qualitative linguistic features may not necessarily be a function of cognitive development. Indeed in respect of sociolinguistic variation Halliday (1975) suggests that there is no necessary recourse to genetic or within person explanations, rather that such variation is explained in terms of social variation.

"All human beings are endowed with the ability to learn the social semiotic; but semiotic systems differ and sometimes they clash which is when the child finds himself in difficulties - his own semiotic is at variance with the received semiotic of the culture."
Halliday (1975) p.21

Knowing when, where and how to speak in a certain way may then be seen as an important executive control skill in respect of perceived classroom competence, Brown (1978). Brown suggests that "rather than thinking of slow learning children as lacking certain skills it might prove profitable to reverse the analysis and concentrate on those they do possess" p.155. The Vygotskian extension of this is to suggest that this approach should consider the sociocultural nature of the schools and classrooms with respect to the competencies acquired. Brown's suggestions focus on the difficulties that some children have in making the transition to formal schooling. As this thesis intends to examine the implications of different forms of organization, the concern is with the particular forms of competence acquired by children in

schools.

Hundeide (1985) illustrated how children are socialized into ways of thinking and speaking within schools by reference to a study by Boschowitsch (1974).

"Boschowitsch (1974, p.217) has described how children give completely different replies to physics problems depending upon whether they were asked in the classroom by a teacher or were asked informally by a psychologist during recess. When the teacher in the classroom asked questions such as "why does a piece of wood float?" the children all repeated Archimedes' law that they had learned earlier. When the psychologist asked the same question during recess, most of them gave "preoperational replies" of the type "It floats because it is light." When the psychologist asked them why they answered differently than they had in the classroom with the teacher, they answered, "Oh, do you want me to reply as I did in the classroom?" and then repeated Archimedes' law. Somehow the correct logical procedure seems to have been embedded in a social episode involving a formal classroom setting with an authoritarian-looking teacher posing the questions. It is a special game in a special setting." Hundeide (1985) p.308

However interesting this observation is, it cannot be regarded as a necessarily valid or sufficiently reliable piece of evidence. The statement was made by one child in one school in a Russian school in the 1930s. Boschowitsch's work serves only as a marker of a potentially fruitful area of study.

Children in secondary schools, in order to appear competent, have to acquire specific subject registers, Gillham (1986). If a child is to be integrated into a mainstream secondary school from a special school, one of the many sets of criteria of competence he/she will be expected to realize will relate to these ways of speaking at specific times and in specific places. Erickson (1982) reports a study of what can go wrong in interviews designed to ascertain whether a child required special education. The timing of a child's replies were crucial to the perception of his/her academic competence in the eyes of the teacher. The failure to acquire one rule, as to when to speak, resulted in the

child's referral. As almost all secondary schools have a range of discrete curriculum subjects the child not only has to perform "school talk" but also switch from one form of classroom talk to another throughout the day.

The ability to realize the linguistic criteria of competence operating in classrooms, particularly across the range of mainstream secondary schools, would appear to be an ideal if somewhat underexplored aspect of the social institutional effects of schools.

"There has certainly been too little investigation of how, and how quickly children learn to cope with the communicative demands of classrooms...There has also been too little investigation of the etiquettes of communication prevailing in particular classrooms, of how predictably these vary by age group and curriculum and how pupils new to the school, the subject or the teacher learn what is feasible and appropriate." Edwards (1980b) p.41

The interactionist analysis presented above attempts to unify the factors of nature and culture in ontogenetic development in line with the theories of Mead and Vygotsky. In order to account for social institutional factors in this analysis a theory is required which will relate structural features to interactional practices. Speech has been taken as the object of study most likely to evidence sociocultural effects. The question then becomes as to how to relate aspects of individual children's speech in these contexts. It is clear that instructional contexts in schools demand the realization of specific linguistic competences on the part of individuals. What is required is an approach to describing these contexts which may be used in the formulation of empirical studies which enable the researcher to detail realization of these descriptions in children's speech. This will be provided in Chapter 3.

CHAPTER 3

A MODEL OF EDUCATIONAL TRANSMISSION

This chapter will introduce a model of educational transmission which will facilitate the design of the empirical studies. It has been argued in Chapter 2 that whilst the post-Vygotskian approach has made a significant contribution to the understanding of the mediation of some social factors to the individual, it has failed to provide a description and thus an adequate consideration, of socio-institutional factors. The major part of this chapter will provide an outline of Basil Bernstein's general model which is both compatible with the Vygotskian approach and also provides an account of wider societal issues. Two other areas of research activity which have considered some of the relevant issues are briefly discussed. These are symbolic interactionist studies of classroom life and the so-called "school effectiveness" research.

Symbolic Interactionist Studies

There have been a great number of symbolic interactionist studies of classroom life. These articulate a concern for social cultural historical processes at the level of meaning but are limited in their search for the understanding of principles of regulation of these meanings. Just as Wertsch criticized Vygotsky for his lack of investigation of socio-institutional forces, so Taylor and Johnson (1986) have criticized the symbolic interactionists.

"..the symbolic interactionists are essentially sociologists who aspire to make the leap to 'society as symbolic interaction', but who in fact most often stay at the interactional level or share psychological social psychologists' focus on the individual-interaction link."
Taylor & Johnson (1986) p.183

Paraphrasing Blumer (1969), symbolic interactionism assumes that human beings act towards things on the basis of the meanings that the things have for them. The meaning of such things is derived from or arises out of social interaction and these meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters. Major influences in this approach were Dewey, C.S. Pierce, William James and G.H. Mead. It is, in fact, Mead who is most regularly compared with Vygotsky (cf Wertsch, 1985) although there are other parallels. They all share the desire to create a non-reductionist, non-determinist account of mind, and yet are all criticized for failing to account for social structure beyond personal interactional processes.

One of the themes common to research studies in this paradigm is the tendency to focus on language:

"Symbolization constitutes objects not constituted before, objects which would not exist except for the context of social relationships wherein symbolization occurs. Language does not simply symbolize a situation or object which is already there in advance; it makes possible the existence or the appearance of the situation or object, for it is part of the mechanism whereby that situation or object is created."
Mead (1934) p.78

In a way that parallels some of Vygotsky's notions, the focus on language as the vehicle of interaction and self concept as an antecedent to interaction provides symbolic interactionism with an understanding of the links between individual psychology and social structure. Similarly, for those employing phenomenological methods language assumes a position of prominence.

"In their development and domestication of the phenomological perspective Berger and Luckmann (1967) stress how linguistic categories embody and crystallize the sedimented experiences of shared cultural resources. Language is thus, par excellence, the medium of the social construction of reality."
Atkinson (1985) p.57

The importance of work in this paradigm should not be underestimated. Whilst it fails to articulate a language which describes social institutional factors, it has provided insight into the practices of negotiation within the classroom.

In this case such studies, along with work conducted in an explicitly Vygotskian framework, have indicated that the use to which language is put in classrooms can fundamentally affect the way in which children are perceived. Of particular interest is the work of Barnes (1976) who considered the way in which the curriculum was realized through personal and conversational interaction. Considerations concerning the appropriateness of utterances and written statements in particular curriculum contexts led to a deeper understanding of the communicative life of classrooms. Mehan (1978) argues that the differential use of language in the classroom is governed by socially negotiated rules. However, Mehan failed to provide the account that he intended. Nowhere in this study nor in those of the symbolic interactionist group is there an attempt to formulate the rules governing social and/or academic behaviour in terms of underlying principles of regulation.

These insights act as the parameters for the research undertaken here. However, a further question must be asked as to the nature of the principles governing the negotiation of classroom communication. Concern is also with the effect of the school as an organized institution, specifically with the principles that regulate the internal orderings of the institution.

School Effectiveness Research

The research that has focussed on schools as organized institutions has been extensively reviewed (cf. Tyler, 1983, Rutter, 1983, 1985a & b and Galloway, 1986).

Much of this work has attempted to answer the question "what makes a good school?" These "schools make a difference" or school effectiveness studies attempt in various ways to identify the processes and structures crucial to the performance of a school as an organization, i.e. ILEA (1986), Rutter et al (1979), Reynolds (1982).

Criticism of this research has varied depending on the paradigm within which the critics operate. Thus Measor and Woods (1984) from the symbolic interactionist perspective, criticize Rutter et al's (1979) view of "ethos". They claim that "ethos" involves quantitatively elusive elements not directly susceptible to statistical analysis whereas Rutter et al did not study items they could not measure.

"Whatever it is, 'ethos' is not a thing, nor a settled state of affairs with constant parameters to which all subscribe in equal measure. Our view of it rather suggests a moving set of relationships within which different groups and individuals are constantly in negotiation. It is expressed largely in symbolic form, notably in language, appearance and behaviour. Over time, these symbols may become cryptically abbreviated, intelligible only to insiders. Accordingly the most appropriate method, we feel, for the study of these processes is ethnography..."
Measor & Woods (1984) p.25

Tyler (1983), a sociologist, criticized the methods of Rutter et al (1979) as being a not entirely justifiable "rather inductive derivation of a composite 'process' or 'climate' variable from a host of indices of the school's internal state" p.2. Tyler (1983) also bemoans the lack of attention paid to the search for the "less apparent sources of structuring beneath the surface of the empirical data" p.2.

This thesis adopts the position taken by Tyler (1983) that what is required in these studies is a form of analysis that enables the "less apparent sources of structuring" to be elucidated. That is, an attempt should be made to articulate the structural principles which regulate the internal interactions of the school and themselves have a socio-historical perspective. Much of the school effectiveness research appears to adopt an ad hoc method of identifying relevant characteristics of effectiveness. There appears to be no theory which generates these criteria and it thus becomes difficult to understand the process by which schools are changing and will change. An analysis of power and control is lacking in these studies which indicates their inability to deal with the emergence of new organizational forms through conflict. Conflict within a particular teaching style was evidenced by Bennett (1976): his research indicated that not all teachers affiliated equally strongly to particular forms of pedagogy and this in turn resulted in a high degree of variation within what he termed "teaching style". The study gave no possibility of analysing the principles which regulated the pedagogic practice of the schools concerned. An understanding of the principles of control operational in the schools would have enabled a more delicate analysis of the structuring of classroom, and thence face to face interaction within the schools.

Returning to the post-Vygotskian notion of "motives" in activities (Wertsch, 1985), school effectiveness research tacitly assumes that all schools share the same "motive". It may be as Booth (1985) suggests that the "preferred ethos for schools is not caused by a relationship with so-called outcome measures. On the contrary the outcomes we expect as well as the means we employ to achieve them depend on the way we wish to run our schools", Booth (1985) p.12.

The implication of Booth's statement is that research must endeavour to understand the principles which regulate and guide the practice of particular schools. In a sense research designed to compare the effects of schools must treat each school as a fixed effect in any analysis of variance, in that the levels of the main effect (schools) under test can only be used to understand the effects of those particular schools. To claim as Mortimore et al (1985) do that schools are modelled as random effects and thus that inferences could be drawn about schools in an authority as a whole must be open to question.

As this study is concerned to detail the implications of placement in different special schools for pupils, it also requires a form of analysis which will enable the understanding of school intentions. These motives/intentions may then be considered in the light of data related to the way in which the school seeks to attain its desired outcomes. An analysis of the relations of power and control inside and outside the institution would enable the researcher to view the structuring of interpersonal interchange in the light of overall motives.

The Vygotskian and symbolic interactionist studies indicate strongly that the study of language use in schools should enable the researcher to inspect the regulation of interpersonal action according to socio-institutionally based principles, that language is the major vehicle by which the social is semiotically mediated to the individual, yet many other sign systems fulfil its mediational function.

It is also clear that the way in which the classroom is organized has important implications for the dynamics of interpersonal interchange particularly in special education with respect to attitudes and perceptions. Vygotskian studies in the psychology of children with learning difficulties indicate that unless the social circumstances of learning are acknowledged in the design of empirical studies, the results are of doubtful ecological validity. These Vygotskian studies have led many prominent researchers to suggest that the investigation of children's abilities to know when and where to produce certain performances is an important area of study with respect to our understanding of moderate learning difficulty.

The school effects research has shown that in some way "schools do make a difference", even if there remain doubts about the methods of investigation employed. In the field of special education it is well established that schools are likely to vary greatly even within one authority, due largely to the high degree of autonomy of the Head-teacher. However, with the implementation of the 1981 Act an important consideration for the children who attend special schools is the likelihood of them returning to a mainstream setting. One of the important characteristics of, particularly, secondary schooling is that children have to realize the demand for differential use of speech in specific subject contexts. Knowing what, when, where and how to speak becomes an important factor in the formation of teachers' perceptions of children's ability in mainstream schools. The relation of the special school curriculum to the mainstream curriculum becomes an important factor for the child who is involved in any integration programme. The greater the difference between the two the greater the curriculum distance the child has to travel.

Children are placed in special schools partly because of their difficulty in learning in school and school intelligence appears to be strongly related to speed of learning and transfer of training. Thus the greater the distance, the less likely the transfer and the more disadvantaged the child, certainly in terms of the time taken to "bridge the gap".

What is required is a theory that can draw on the strengths of the research reviewed above and act as a focus to integrate these findings into an empirically verifiable form. An examination of the curriculum and the structure which it assumes in a school can then be related to the interactional practice of the school, specifically to the use of subject specific language. Underpinning this must be a consideration of the overall intentions of the special school activities. Whilst a mainstream school may value subject specific use of language in academic settings this may not be an intentional motive in the special school. At some point in the analysis an allowance must be made for schools that do not intend whether tacitly or explicitly to integrate children, whose motives lie elsewhere.

Shibutani (1962) serves as a useful point of departure for the next section.

"The failure to make the connexion between Meadian social psychology and the sociology of knowledge on the part of the symbolic interactionists is of course related to the limited diffusion of the sociology of knowledge in America, but its more important theoretical foundation is to be sought in the fact that both Mead himself and his later followers did not develop an adequate concept of social structure. Precisely for this reason, we think, is the integration of the Meadian and Durkheimian approaches so very important".
Shibutani (1962)

It is through the integration of the Meadian and Durkheimian and other approaches that the overall model to be used in this study originated. This continually developing model is that of Basil Bernstein.

Aspects of Bernstein's approach to the School

This thesis does not intend to embark on an overall review of Bernstein's work nor on the range of critical comments that it has attracted. This project has been undertaken recently on several occasions i.e. Atkinson (1985), Moore (1984), Diaz (1984), Tyler (1983).

It is clear from these reviews and the work of Bernstein himself that he directly addresses the issues of concern in this study.

"Essentially and briefly I have used Durkheim and Marx at the macro level and Mead at the micro level, to realize a sociolinguistic thesis which could meet with a range of work in anthropology, linguistics, sociology and psychology."
Bernstein (1972) p.160

"Bernstein's thinking was influenced profoundly by his acquaintance with the various philosophical and anthropological authors on language and symbolism - including Cassirer and Whorf. To this was added the work of the Russian psychologists Vygotsky and Luria."
Atkinson (1985) p.14

Whilst it appears, as Atkinson (1985) notes, that Bernstein epitomizes an essentially 'macro' sociological point of view.

"It is undoubtedly true that in Bernstein's general approach there is little or no concern for the perspectives, strategy and actions of individual social actors in actual social settings."
Atkinson (1985) p.32

The fact that Bernstein has utilized Mead and Vygotsky in the formulation allows for the exploration of interpersonal relations at the face to face level in the classroom. Thus many of the symbolic interactionist and Vygotskian inspired insights noted above can be

subsumed into his model which affords the wider social dimension a central place in a general thesis. The implications of the micro-sociological, social psychological and psychological studies at times require reformulation in the light of this extended social perspective. In that wider social institutional factors will have been reduced to lower levels of explanation, there is the potential within such studies for the distortion of results. In the same way psychological studies of learning which ignored contextual constraints confounded and confused interpretation of results.

A consideration with respect to Bernstein's relation to structuralist theory is raised by Atkinson:-

"Given the structuralist character of his thought, it is perhaps odd that in the development (under developed though it is) of the psychological analogues of the sociology, Bernstein explicitly acknowledges no great debt to Piaget; this despite the fact that Piaget's project is itself structuralist."
Atkinson (1985) p.59

It is certainly true that Piaget was a structuralist; however, it is doubtful as to whether his work can be seen as a "psychological analogue" of Bernstein's sociology. It is argued here that the work of Vygotsky and his followers provides the psychological analogue required rather than Piaget's version of structuralist psychology.

Piaget distinguishes between what he calls the individual subject and the epistemic subject.

"Thus in the first place, structuralism calls for a differentiation between the individual subject who does not enter at all, and the epistemic subject that cognitive nucleus which is common to all subjects at the same level."
Piaget (1971) p.139

The subject is constituted, in Piaget's structuralism, through the construction of knowledge, logical structures or operations, rather than as in Bernstein's thesis through social relations. The tension between a socially driven version of structuralism and a mathematical, biologically driven version is discussed by Piaget when he compares his own views with those of Foucault.

"To call Foucault's structuralism a structuralism without structures is, accordingly, no exaggeration. All the negative aspects of static structuralism are retained - the devaluation of history and genesis, the contempt for functional considerations... - his structures are in the end mere diagrams not transformational systems - only one thing is fixed, language itself, conceived as dominating man ..."
Piaget (1971) p.134/5

Whereas his view is that

"the subject exists because, to put it briefly, the being of structures consists in their coming to be, that is their construction."
Piaget (1971) p.140

Of the group of writers influenced by Foucault it is perhaps Walkerdine who most clearly presents a post-structuralist review of Piaget's thesis.

"It is a basic notion within the Piagetian formulation that the origin of conceptualization lies in the formation of schema from the internalization of action upon objects. Piaget proposes the possibility of a separate and primary theory of the child's appropriation of the world of objects, of signifieds, and a secondary process in which concepts formed at this level are represented by signifiers. Thus in Piaget's terms the production of the sign happens in terms of grafting of signifiers onto existing concepts. The primacy of cognition is asserted by the possibility of the prelinguistic but cognate subject."
Walkerdine (1982) p.130

Piaget's view of the child constructing its way through a given system of logical structures is entirely different from Vygotsky's stage theory where development is through different forms of social relation with their respective "leading activities", Sutton (1980a).

Bernstein's work is certainly compatible with the activity based psychology which has developed from Vygotsky's original formulations, which in turn were influential on Bernstein's own development.

It has been shown that Vygotsky's approach lacks that which Bernstein explicitly has set out to provide - a theoretical framework for the description and analysis of the changing forms of 'cultural transmissions':

"I wanted to develop a different approach which placed at the centre of the analysis the principles of transmission and their embodiment in structures of social relationships."
Bernstein (1977) p.3

Bernstein's Sociology of the School

Bernstein's work on the school shows his continuous engagement with the inter-relations between changes in organizational form, changes in modes of control and changes in principles of communication. In an initial study, Bernstein (1966), he provides an analysis of the different involvement of pupils in the school in terms of typology of their (and their family's) relation to an understanding of the ends (goals) of what was termed the instrumental and expressive order of the school. The instrumental order regulated the transmission of specific skills through subjects, whereas the expressive order regulated the transmission of expected conduct, character and manner of staff and pupils. Essentially the expressive order encapsulated the beliefs, values and moral practice.

This initial paper placed the emphasis upon the student, the paper that followed, Bernstein et al (1966), placed the emphasis upon the analysis of the instrumental and expressive orders themselves and changes in the modes of control to which they could give rise. Instrumental orders could give rise to stratified or differentiated structures. In the former case subjects were specialized and self-contained, staff relations were hierarchical and social control was positional, where rituals explicitly maintained boundaries and transitions. In the latter case (differentiated) staff relations were less hierarchical, subjects were less specialized and more open to each other, forms of social control became what Bernstein refers to as therapeutic and rituals celebrated participation/negotiation rather than boundaries. Bernstein makes it quite clear, often ignored by critics, that whereas these types could characterize whole schools, both types of structure could be found in the same school, albeit regulating different

sections, the differentiated type being more likely to be associated with children who become seen as less able.

It is possible to see in these very early papers the basis of the analysis which developed. Essentially (if embryonically) the analysis focusses upon two levels: a structural level and an interactional level. The structural level is analysed in terms of the social division of labour it creates and the interactional level with the form of social relation it creates. The social division of labour is analysed in terms of strength of the boundary of its divisions, that is, with respect to the degree of specialization. Thus within a school the social division of labour is complex where there is an array of specialized subjects, teachers and pupils, and it is relatively simple where there is a reduction in the specialization of teachers, pupils and subjects. In the case of a complex division of labour the interdependence is apparent only through the subjects required to pass examinations (except broad divisions arts/science, academic/practical), whereas the specialization of the subjects themselves bear some indirect relation to the interdependence of occupational functions at work. Thus the key concept at the structural level is the concept of boundary, and structures are distinguished in terms of their boundary arrangements.

The interactional level emerges as the regulation of the transmission/acquisition relation between teacher and taught: that is, the interactional level comes to refer to the pedagogic context and the social relations of the classroom or its equivalent. The interactional level then gives the principle of the learning context through which the social division of labour, in Bernstein's terms, speaks. This level of

analysis is differentiated out of the more general pervasive regulation of the instrumental and expressive orders.

The key feature of the regulation of the local pedagogic context is the nature of its control and this is analysed again in terms of the boundaries created between (and within) transmitters and acquirers, whether these were teachers/students or parents/children. Where the boundaries in the social relation and context were explicit between teachers and pupils and between pupils with respect to what was referred to later as position, posture, dress and communication, then control was considered positional and the power base of the social relations was explicit. On the other hand, if the boundaries were implicit between teachers/pupils the control was considered personal (therapeutic) and here the power base of the social relation was implicit. Clearly in the latter case events could reveal the latent power and the control would become positional. In the case of positional control, power over the pedagogic context lay with the teacher (although the teacher may not necessarily be able to use it effectively), and the discretion available to pupils would be reduced. In the case of personal control there was the appearance of a negotiated power relation and pupils would have greater control over the communication and consequently a wider area of discretion. Thus in this earlier work the concept of boundary was integral to the analysis of the structural level and to the interactional level.

The explicit analyses undertaken in the early studies tended to elide, even condense, the structural and interactional levels, making the interactional level subordinate to the structural. For example, positional/personal modes of control are described both in terms of

their respective divisions of labour and their modes of control, and this is also the case for the stratified/differentiated division. In the next stage of the development the structural level is clearly separated from the interactional, both are given independence in the forms they can take, but at the expense of condensing the instructional and explicitly moral features of the pedagogic context. (However, these features are separated out in the empirical research based on the model. Pedro (1981), Donoso (1984), Diaz (1984)).

The same strategy of exposition adopted for the earlier period will be used here. Primacy will be given to the conceptual development even at the cost of the history of this development

Bernstein subsumed the structural and interactional level under the regulation of the concept of code and thus brought the approach to the study of the school in line with the approach to the study of the family. In the same way that in the family the orientation to restricted/elaborated meanings could differ in their realization according to positional/personal modes of control, giving rise to positional/personal, elaborated/restricted codes, so in the school its fundamental elaborated orientation (according to Bernstein) could be realized differently through different modes of control.

Thus orientation plus realization is required to define codes and these in turn, when acquired, control recognition rules and realization rules; different codes lead to different recognition and realization rules. However, this is an advance of the progression of the exposition.

The solution to linking the structural and interactional levels in such a way that these levels up to a point are in relation of free variation was to distinguish in the school three message systems: curriculum, pedagogy (practice) and evaluation. Curriculum referred to what counted as legitimate knowledge and the latter was a function of the organization of subjects (fields), modules or other basic units to be acquired; pedagogy (practice) referred to the local pedagogic context of teacher and taught and regulated what counted as a legitimate transmission of the knowledge; evaluation referred to what counted as a valid realization of the knowledge on the part of the acquirer. Evaluation was given no separate analysis (until much later) and it was considered to be dependent on the organization of the curriculum and the form of pedagogic practice. Curriculum was to be analyzed not in terms of contents but in terms of relation between its categories (subjects and units). Pedagogic practice again was not to be analyzed in terms of its contents but in terms of the control over the selection, sequencing, pacing and criteria of communication in the transmitter/acquirer relation. It is apparent that the curriculum is regarded as an example of a social division of labour and pedagogic practice as its constituent social relations through which the specialization of that social division (subjects, units of the curriculum) are transmitted and expected to be acquired. Bernstein uses the concept of classification to determine the underlying principle of a social division of labour and the concept of framing to determine the principle of its social relations and in this way to integrate structural and interactional levels of analysis in such a way that, up to a point, both levels may vary independently of each other.

Classification

Classification is defined at the most general level as the relation between categories. The relation between categories is given by their degree of insulation. Thus where there is strong insulation between categories, each category is sharply distinguished, explicitly bounded and having its own distinctive specialization. When there is weak insulation then the categories are less specialized and therefore their distinctiveness is reduced. In the former case, Bernstein speaks of strong classification and in the latter case Bernstein speaks of weak classification. From this point of view the principle of the classification is given by the degree of insulation. If the insulation changes its strength, then the principle of the classification has changed. The crucial question then becomes what creates, legitimizes, maintains and reproduces insulation and therefore the principle of classification.

Attempts to change the insulation will evoke the power relations which will attempt to restore the principle of classification. Thus power relations are linked and relayed by the principle of classification.

Bernstein gives many examples of strong and weak classification. Gender relations may be more or less specialized and therefore differ in their classificatory principle. School subjects may be more or less specialized and therefore differ in their classificatory principle and so in their social division of labour. The agents of the mode of production may be more or less specialized to discrete functions and therefore differ in their classificatory principle and so the relations between these agents may also be analyzed in terms of a classificatory principle. Therefore the principle of the classification is realized

in the relation between the categories of any social division of labour, whether its categories are categories of discourse, categories of practice, categories of agents or categories of agencies. In this way, Bernstein makes the link between the distribution of power, the principles of classification and the social division of labour.

Framing

Framing refers to the regulation of communication in the social relations through which the social division of labour is enacted. The social relations generally, in the analyses, are those between parents/children, teachers/pupils, doctors/patients, social workers/clients, but the analysis can be extended to include the social relations of the work contexts of industry or commerce. Bernstein considers that from his point of view all these relations can be regarded as pedagogic relations through which cultural reproductions occur. Two features of the pedagogic relation are distinguished: an interactional feature and a locationary feature.

Interaction refers to the selection, organization (sequencing), pacing and criteria of communication - oral/written/visual - together with the position, posture and dress of communicants.

Location refers to the physical location and the form of its realization (i.e. the range of objects and their attributes, their relation to each other and the space in which they are constituted). Framing at the most general level refers to the locus of control over the interactional and locationary features. Where framing is strong the locus of control lies with the transmitter. Where it is weak the acquirer has greater control over these two features. Strong and weak

framing are designated +F/-F and the +/- are considered as the values of the framing.

A further distinction is made between the internal values of the framing (F^i) and the external values (F^e). F^i refers to the controls within the pedagogic relation/context (teacher-pupil-classroom) and F^e refers to the controls regulating what communications from outside the context/school may legitimately enter the pedagogic context/school from, for example, the family, peer groups, community or media. The framing regulates pedagogic practices and their contexts and so the principles of communication.

"Framing refers to the control on communicative practices (selection, sequencing, pacing and criteria) in pedagogical relations, be they relations of parents and children or teacher/pupils. Where framing is strong the transmitter explicitly regulates the distinguishing features of the interactional and locational principle which constitute the communicative context ... Where framing is weak, the acquirer is accorded more control over the regulation.

Framing regulates what counts as legitimate communication in the pedagogical relation and thus what counts as legitimate practices."

Bernstein (1981) p.345

In this system change can come about in two ways.

Change generated from below

Any progressive weakening of framing by either transmitter or acquirer, or both, will at some point challenge the principle of classification and the insulations it regulates for communications/practices will be realized at variance with legitimate expectation. Weakening of F^e may lead to illegitimate community contents, media contents, political contents entering the pedagogic context. Weakening of F^i may lead to pupils having too great a control over subjects/units and putting

together that which, according to the principle of classification, should be kept apart (e.g. an illegitimate integration of subjects/units).

Change imposed from above

Change may be imposed, for example, by the state or LEAs. Hence Bernstein hypothesised that in general, in times of economic prosperity classification and framing would tend to weaken, whereas they would strengthen in times of severe unemployment. This point of view, then, predicts the current move to introduce an emphasis on basic skills, clearly defined criteria and periodic evaluation of teacher and taught, together with the substitution of applied skills for academic skills.

On the basis of classification and framing concepts, their values (+/-) and the distinction between internal and external, a variety of pedagogic structures may be generated according to their organizing principle, that is, in terms of their underlying code. Further, it becomes possible to see how a given distribution of power through its classificatory principle and principles of control through its framing are made substantive in agencies of cultural reproduction, e.g. families/schools. The form of the code (its modality) contains principles for distinguishing between contexts (recognition rules) and for the creation and production of specialized communication within contexts (realization rules).

"Through defining educational codes in terms of the relationship between classification and framing, these two components are built into the analysis at all levels. It then becomes possible in one framework to derive a typology of educational codes, to show the inter-relationships between organizational and knowledge properties to move from macro- to micro-levels of analysis, to relate the patterns internal to educational institutions to the external social antecedents of such patterns, and to consider questions of maintenance and change."
Bernstein (1977) p.112.

Forms of Framing and Forms of Pedagogic Practice

For the purposes of this thesis it is useful to include an exposition of two forms of pedagogic practice which are produced by the extremes of framing (+f^{ie} , -f^{ie}), for these analyses point to the later analysis of the nature of pedagogic discourse which will only briefly be touched on here.

In the definition of the forms of pedagogic practice the inter-actional features of framing are highlighted and it is clear that the locational features are considered subordinate to the interactional. Within the interactional features two (framing) levels are distinguished:

- 1) Hierarchical
- 2) Discursive

The Hierarchical level (and its rules) refer to the power relations between teacher and taught as these determine position, conduct, character and manner of the acquirer. The hierarchical rules establish and regulate the form of the social order and thus the regulative discourse of the pedagogic relation.

The Discursive level (and its rules) refer to the transmission/ acquisition of the instructional practices and their relation to each other. The discursive rules refer to the sequencing, pacing (rate of expected acquisition) and the criteria of the instructional practice. (Selection is assumed in this analysis.) See Footnote 1.

Footnote 1

It can be seen that in this distinction there are echoes of instrumental/ expressive orders from the analysis of the school, Bernstein et al (1966), instructional, regulative, socializing contexts in the family, Bernstein (1967), and, as will be shown, positional/personal forms of family control, Bernstein (1962).

Visible Pedagogy (V.P.) and Invisible Pedagogy (I.P.)

A V.P. is defined as having explicit hierarchical rules where the focus of power is explicitly with the teacher over the creation and establishment of social order in the classroom, and explicit discursive rules of sequence, pace and criteria. I.P. is defined as having implicit hierarchical rules where power is less explicit and the social order has far more the appearance of the result of negotiation than imposition. The discursive rules of sequence and pace are implicit and not immediate or obvious to the acquirer and they are likely to be derived from a group of cognitive, learning, linguistic, affective theories emphasizing developmental stages; the shared competences of the acquirer active in his/her own learning, the facilitating rather than the imposing of social rules. In the case of a V.P. the acquirer would be more aware of the principles of the discursive transmissions as these would be explicit, but in the case of I.P. such awareness would not initially be possible, as the principles of the discourse to be transmitted are derived from complex theories of child development, language and learning. Bernstein considered that progressive infant practice, where it existed, would take the form of an I.P. and empirically have the following features.

- 1 Where the control of the teacher over the child is implicit rather than explicit.
- 2 Where, ideally, the teacher arranges the context which the child is expected to rearrange and explore.
- 3 Where within this arranged context, the child apparently has wide powers over what he selects, over how he structures, and over the time-scale of his activities.
- 4 Where the child apparently regulates his own movements and social relationships.
- 5 Where there is a reduced emphasis upon the transmission and acquisition of specific skills.

6 Where the criteria for evaluating the pedagogy are multiple and diffuse and so not easily measured.
Bernstein (1977)

It must again be emphasized that these types are defined in terms of their value for analyzing underlying structural codings. The fact that the "progressive" invisible pedagogy may often not be operational in an ideal form does not serve to denigrate the value of the type itself Simon (1981). In that the invisible pedagogy is constructed out of elements of psychologically diverse theories, it may be that the implicit features are neither visible to teachers nor to the children. Whilst Bernstein claims that "visible and invisible refer to the transmission from the point of view of the acquirer, not that of the transmitter", Bernstein (1977) p.119, it may be that the socialization of teachers into the practice of the invisible pedagogy has been incomplete and that the teachers' previous experience of teaching and teachers subverts the practice.

In the visible pedagogy the teacher is concerned to transmit by means of a relatively explicit set of procedures, skills and conduct to the acquirer. To this extent the V.P. presupposes a passive model of the acquirer and the emphasis is upon the what and how of the transmission, the clarity and explicitness of the criteria. It may be said that a V.P. privileges the logic of transmission, whereas in the case of an I.P. the teacher posits problems, arranges contexts and the child acquires performances on the basis of a display and sharing of his/her competences through the practice of problem solution and/or activity. Thus an active model of the learner is assumed. Whereas a V.P. privileges the logic (or ordering) of the objective transmission, an I.P. privileges the logic of acquisition - the potential of the

internal orderings of the acquirer. Bernstein in his analysis concentrates upon the social class assumptions of the two modalities of pedagogic practice, their sponsoring by different factions within the middle class and the forms of familial socialization their successful acquisition presupposes, but these issues are not relevant to the immediate concerns of this thesis.

Pedro, whose PhD was supervised by Bernstein and published in 1981, utilized this distinction between forms of pedagogic practice in her study of ongoing classroom communication in Portuguese primary schools drawing pupils from different social class backgrounds. Pedro utilized the early distinction made between instructional and regulative discourse where the former refers to the transmission of skills and their relation to each other, and the latter refers to the principles of social order, relation and identity. In the context of the framing of the pedagogic practice, instructional discourse is created by the discursive rules and regulative discourse is created essentially by the hierarchical rules. Pedro's research concentrated upon the analysis of the framing and the regulative discourse and thus upon the hierarchical rules of classroom interaction.

Pedro found that:-

"The stronger the framing the more likely regulative discourse will be constituted by imperative and positional modes; the weaker the framing, the more likely that the personal mode will be used to create regulative discourse.

The greater the use of the imperative mode, the more the child is socialized into subordination through the use of explicit power. The greater the use of positional modes, the more the child is socialized into the rules, grounded or otherwise regulating a strong classification of social categories, e.g. age, sex, age relation, pupil, teacher, parents, etc. The more the control is personal, the less it creates explicit hierarchy and the less visible is the power base of the control.

The more implicit is the hierarchy, the more control will inhere in inter-personal communication and this will create a specialized use, this has many implications."
Pedro (1981) p.77

Pedro (1981) analyses ongoing classroom talk in terms of the above and shows that the social class background of primary school pupils acts selectively on the framing of regulative discourse, i.e. F- in the middle class schools and F+ in working class schools.

In much of the later empirical work, including that of this thesis, the analysis distinguishes between instructional and regulative discourse. Bernstein is very explicit about the nature of pedagogic discourse which he regards as consisting of one discourse created by the embedding and inter-penetration of instructional and regulative discourse. However, in the case of empirical studies these two dimensions can be examined separately where the framing values of regulative discourse may not be the same as the framing values of instructional discourse (Footnotes 1 & 2 at the end of the Summary.)

Summary

Thus it may be said that classification says something fundamental about the relationships between categories which create the context of the school, and framing says something fundamental about the form of the content in the process of its transmission. Now, apparently, the analysis is a long way from the everyday activities and practices of the school and its surface rules, but the thesis is attempting to extract the principles which generate activities, practices and rules. Or perhaps, more accurately, trying to analyse the principles of which the everyday experiences, activities and practices are realizations. From this point of view the basic message structures of the school, the

codes which the acquirer tacitly infers, are given by the principle of the relationships between classification and framing. It has been argued that the principles of the power relationships are made manifest in the principle of the classification (the relationships between the categories), and the form of control is realized in the principles which create the framing (pedagogic practice). As the acquirer tacitly acquires these principles, he/she acquires the underlying code. In this way, classification and framing regulate meanings, and, more importantly, the principle which creates and maintains what count as legitimate meanings. From this point of view, power and control are made substantive in the classification and framing procedures which in turn regulate recognition and realization rules, create particular contexts and forms of educational practice which constitute the particular acts of social relationships of the school. It may be said that from this point of view, in its social relationships, activities and practices, the school symbolizes power and control. It becomes a further crucial question to enquire into the social origins and consequences of the form(s) of power and control, overt and covert, in the school in different historical periods and in different societies. Bernstein (1977).

The analysis of classification and framing can be applied to different levels of school organization and various units within a level; however, certain levels will be selected for examination in the case of this thesis. The rationale guiding the selection here is the level of delicacy necessary to permit analysis of the recognition and realization rules governing specific criteria of pupil competence at different ages, for different subjects within the four schools studied.

In the analysis of the reviews of studies of aspects of classroom and school life (expectation, attitude, teacher training, concepts of educational space and language), it was argued that the various attempts to relate socio-institutional factors to aspects of pupil performance were of limited value. As with the studies inspired by the work of Vygotsky, they do not investigate, or even theorize, the principles which regulate the social contexts of schooling. Bernstein's model may be used to investigate many aspects of educational transmission. It can therefore draw on the insights provided by the studies reviewed and enables analysis to proceed at the level of regulatory principles.

From the point of view of this study the model is additionally useful as it permits the analysis of the external relations of the school. The model can deal with relations with other schools, further education, work and parents. This is of particular importance as the schools of concern are special.

Thus by using this model both the internal and external relations of the school may be described. These descriptions may then be used to distinguish between schools and teachers' and pupils' performance within them. In that the model is concerned with principles of regulation of educational transmission at any specified level, it is possible to investigate experimentally the relation between principles of regulation and the practices of pupils.

Footnote 1

Regulative Discourse

Whereas the principles and distinctive features of instructional discourse and its practice are relatively clear (the what and how of the specific skills/competences to be acquired and their relation to each other), the principles and distinctive features of the transmission of regulative discourse is less clear as this discourse is transmitted through various media. Indeed, it may be characterized as a diffuse transmission.

Essentially, regulative discourse communicates the school's public moral practice, values, beliefs and attitudes, principles of conduct, character and manner. It also transmits features of the school's local history, local tradition and community relations. A relevant question about regulative discourse is "whose regulative discourse is transmitted in whose interest?" Such a question points to the ideological basis of any regulative discourse.

In summary, regulative discourse controls the concept(s) of legitimate order, relation and identity and transmits these essentially, but not wholly, through the following media:-

1. Symbolism/Ritual (see Footnote 2)

Such symbolism may refer to the identity of the school (e.g. uniform), of the state (flags, national holidays), memorial plaques, ritual displays, assemblies, entrance and exit practices, controls on movement and approaches to special places e.g. Head's room, staff room, library etc. This is clearly not an exclusive set and, depending on the nature of the school, many other rituals may be found, for example relating to sport, gender, reward and punishment.

2. Interaction

This refers essentially to the spoken (or written) communication concerned with establishing and maintaining principles and practices of expected conduct, given usually by staff, as revealed in documents.

3. Instruction

It is possible for regulative discourse to have its own instructional discourse and its own specialist transmitters: special teachers/courses on leisure, drugs, delinquency, family life, social and life skills etc.

It will also be argued in the main text that the form taken by instructional discourse in classroom practice itself contains important regulatory features.

Footnote 2

It is often thought that symbolism and ritual celebrates distance, hierarchy and deference but this is not necessarily the case; symbolism and ritual may also celebrate participation, sharing and intimacy.

Empirical Testing and Criticism of Bernstein's Model

To a very great extent the criticisms of the classification and framing model are, in fact, criticisms of the first paper in which these concepts were initially presented. Such criticisms, as a consequence, ignore the subsequent theoretical and empirical development. It is a matter of interest that the major critics are those who have never employed the concepts as empirical descriptors (i.e. Pring (1975), Gibson (1977, 1984), Cherkaoui (1977) and Easthope et al (1976). On the other hand, there is a growing literature of the empirical use of the concepts (i.e. Pedro (1981), Tyler (1983), Donoso (1984), Moore (1984) and Diaz (1984)). The conceptual criticisms are, perhaps, best summarized in Gibson (1977) who concentrates entirely on the original paper. The conceptual criticisms will be discussed first and followed by criticism arising out of empirical research.

"This article argues that Bernstein's concepts: classification, framing, code, are misleading and mystificatory in understanding the relationship between knowledge and social structure and processes. They direct attention away from the distribution of power and principles of social control in society and schools. The major weaknesses of the theory have been identified and may be summarised as elasticity of concepts, inadequate level of analysis, neglect of intrinsic logic of subjects, the tautologous nature of the theory, unnecessary technical language, its treatment of ideology, its use of concepts as causal forces, and its ambiguities, inconsistencies and paradoxes.

Gibson (1977) p.44

Gibson argues that the paper is non-sociological because the form of regulation within the school is not conceptually linked to the form of regulation in society. Irrespective of the implicit definition of what counts as a sociological analysis, Bernstein makes it quite clear in the paper that such an analysis is not the intention of the paper.

"The following problems arise out of this analysis:

(1) What are the antecedents of variations in the strength of classification and frames? (2) How does a given classification and framing structure perpetuate itself? What are the conditions and resistance to change? (3) What are the different socializing experiences realized through variations in the strength of classification and frames? - I shall limit the application of this analysis to the consideration of the last two questions."

Bernstein (1977) p.94

If the concepts were as elastic as Gibson suggests, they would not be capable of creating specific empirical descriptions. It is the case that in the first paper the levels at which classification and framing operated were explicitly distinguished and it is the case that the features of framing (selection, sequence, pace and criteria) were clearly articulated together with their internal and external values. The "neglect of intrinsic logic of subjects" is not a matter of neglect - rather it is not the concern of the analysis. It is made quite clear that whatever is the case for an intrinsic logic of subjects, the logic of their transmission, that is, how they enter into pedagogic practice and the form these social relations take, cannot necessarily be derived from the "intrinsic logic". For example, what is the intrinsic logic of education, architecture, physics, that necessarily constrains the contents, relations and priorities of their transmission?

The criticism that the concepts are used as causal forces is very odd and shows a basic misunderstanding of the approach, ~~which is concerned~~ to understand the principles underlying different systems of pedagogic practice and organization. The charge that the theory is tautological presumably refers to the relation between the definition of the concepts and their empirical correlates. In fact, the procedure is to use a minimal set of definitions operating at structural and interactional levels to generate a variety of regulative systems, thus making

comparisons possible at different levels of organization and pedagogic practice. The criticisms of Gibson and those made by Pring (1975) appear to have been made without due consideration being given to the value of a theoretical model which articulates organizational transmissions and acquisitional practices together with the principles of their description, analysis and investigation.

Two major criticisms have been made on the basis of the testing of empirical predictions, Cooper (1976), King (1983). It is a matter of interest that the earlier criticisms presupposed that such testing was not possible.

Cooper B (1976) coded classroom interaction in terms of the coding framework developed at the Sociological Research Unit. His conclusion was that all the communication of the teachers he observed corresponded to that which would be expected under a visible pedagogy regulated by a restricted code. Bernstein has recently refuted this conclusion.

"Because class room talk at the surface level may consist of short question, answer, check, solicit, expand, teacher controlled routines, this does not mean that it is restricted in the terms of the theory only that there is strong framing. Nor does it mean it is restricted because the teacher may use in some subject area a series of short sentences! Instructional routines are essentially a function of the classification and framing values and as these change so will the routines and the positioning of acquirers in social relations, talk and language. The referential relations of the dominating curriculum are, however, still elaborated. Further any given framing positions the acquirer in an embedded pedagogic discourse. Rules of social order, relation and identity are embedded in rules of discursive order, (selection, sequence, pace and criteria).
Bernstein (forthcoming) p.24

Cooper's study does not allow for the possibility that regulative discourse of the school may be governed by strong principles of framing and may thus be realized in highly positional, imperative speech which does not mean that the underlying code is restricted, only that the

modality of control is positional. Bernstein has made it explicit that elaborated codes may be realized through different modalities of control and these modalities have been empirically distinguished. See Bernstein (1971) p.161. Overlaying this is the possibility that the principles of control governing regulative and instructional discourse may not be the same.

"The framing values of regulative and instructional discourse may not be the same. It may well be the case that in some circumstances the school's instructional discourse is suspended and the discourse is then wholly regulative."
Bernstein (forthcoming) p.24

Undoubtedly the most well known testings of Bernstein's early propositions have been those published by King (1983), but these were not of classification and framing.

King constructed 130 structural variables covering aspects of school organization. These variables were designated as open or closed and expressive or instrumental. He hypothesized that if Bernstein's theory was correct then the "closed" variables would correlate positively with one another but negatively with the "open" variables. King (1983) reported only "limited support" for this hypothesis. Tyler (1983) argued that this work was not only methodologically flawed but also based on an outdated version of the model.

"It must be pointed out that the search for an empirical test of Bernstein's theories should not rely on their earlier formulation, such as that employed by King, but rather on their mature version of 'classification' and 'framing'. In other words King's empirically-based rejection of the theory of codes is not only flawed by the type of methodological difficulties just noted, but also by the fairly crude type of functionalism which informs the earlier formulations. Notable in these was the over-emphasis given to the causal links between the division of labour in society and that in the school, and the unidimensionality of the 'open/closed' typology which penetrates both the expressive and instrumental orders. The more mature theory, however, is far more indeterminate as to the direction and strength of causal relationships between school and social order, as well as being (by virtue of its

development of internal structural categories of insulation and control) a far more tractable instrument of analysis." Tyler (1983) pp. 1-17.

Tyler (1983) argued that King's conclusions were premature. Although hampered by the lack of information in King's publications and his (Tyler's) difficulties in obtaining the raw data, Tyler (1983) argues that King's work is methodologically flawed. Tyler (1983) claims, on the basis of his own work, that should King's data become available for analysis using a multivariate canonical or latent variable approach, the results "should also tend to confirm the hypothesis derived from Bernstein's theory", Tyler (1983) Section 7, p.107. His conclusion is that King's work cannot be regarded as a fair or adequate test of Bernstein's early work on School Organization.

There are a number of studies which support the value of the model and many of the earlier theoretical criticisms, notably relating to levels of definition (i.e. Gibson (1977)) and inflexibility (i.e. Easthope et al (1976)), have been neutralized as the model has developed.

There is a more general issue here, and one that applies to many of the issues raised by critics of the model. They tend to see each paper as terminal, whereas in fact the analysis of classification and framing is not static and has been developed considerably since the first paper was published in 1971, notably as in Bernstein (1977) (1981) (1985).

One of the most important advances in the model has been to develop different levels of analysis to suit the needs of particular research questions. The present thesis intends to demonstrate an application of this development and thus to counter many of the criticisms outlined.

The empirical work to be reported in Chapter 5 of this thesis required descriptions of the organization of the schools. Chapter 4 will detail the development of a model of school description. Bernstein's work is taken as a point of departure and the chapter will proceed to outline the development of a model that allowed the schools to be described with the delicacy demanded by the research.

CHAPTER 4
THE SCHOOL DESCRIPTIONS

Introduction

The first three chapters of this thesis have outlined the case for studying the transmission of selected criteria of communicative competence. It was argued in Chapter 1 that the practice of special education currently involves asking how the conditions and context of schooling could be changed so as to maximize the support offered to children who are considered to have learning difficulties. In order to answer these questions professionals, working within the system, require techniques which enable educational environments to be evaluated in terms of the demands they place on children. Chapter 1 argued that it was precisely this aspect of evaluation which was missing from much of the psychological investigation of learning difficulty. Later, it was argued that, in order to remedy this omission, a group of researchers, working mainly in the U.S.A., have employed methods adapted from the pioneering work of L.S. Vygotsky, whose approach was primarily concerned with the social mediation and consequent internalization of the social context of learning.

Following Vygotsky's insistence that speech constitutes the most important sign system in this process of mediation, a number of examples were given of studies which demonstrated the value of studying the use of speech in different educational contexts. However, as was argued in Chapter 2, whilst Vygotsky stated that socio-institutional factors must be considered in studies of individual functioning, he and his followers have failed to account for social factors beyond face to face interaction. Indeed, as was argued in this chapter, the gap between studies which focus on institutions and those which focus on

individuals endures. Bernstein's work was introduced because it provides a way of describing institutions which enables research to be designed with the intention of studying the relation between institutional factors and individual functioning.

This thesis is not concerned so much with levels of individual functioning as with the nature of the competences acquired in different settings. It is argued that if different special schools demand different criteria of competence then the implications for integration of their pupils into mainstream schools (which will have their own criteria of competence) are of considerable importance. How well children perform in response to these demands is not the primary concern. The major concern is with understanding the relation between the institution and the criteria demanded.

Initial interest in this research problem arose through experience as a deputy headteacher in a special school. A number of visits were made to other special schools. It became apparent that there was a high degree of variation in the form of organization of these schools. The question which arose was as to whether these different forms had implications for pupils.

This chapter will introduce these schools and detail the model of description derived from Bernstein's overall model. The schools selected represent a sample of forms of school, not of all schools.

The boundaries between subjects and, to a lesser extent, teachers, were the aspects of school organization which were used initially to distinguish between schools. The criteria of communicative competence within subjects were the major focus of attention.

This chapter will derive the model of description and then apply it to each of the four schools.

THE SCHOOLS

Four schools were studied in the course of this project. They have adjoining catchment areas in one Local Education Authority.

For the purpose of this study they will be referred to as:

1. Treliske County
2. Ashurst
3. William Hardie
4. Cadbury Hill

The Local Education Authority schools' handbook describes these schools as catering for children with learning difficulties. Before the 1981 Education Act was implemented in April 1983 they were described as catering for ESN(M) children. All four schools provide education for children of both sexes in the age range 4-17. Whilst falling roles alter the size of each school's population from year to year, they have remained within the range 135-155 on roll and thus in the administrative categories of 6(S) or 7(S). Each school is situated in a residential area of a town and draws from a mixed urban and rural catchment area.

The schools were visited on many occasions over a period of three years and the Headteachers were interviewed in order that the following descriptions of classification and framing could be defined for the

theory of instruction in each institution. It cannot be overemphasized that assigning a value to a function is in the nature of a hypothesis. The breakdown or profile of functions in a particular school or classroom will give an indication of markers that will be available to empirical investigation.

In order to describe the schools in terms of principles of classification and framing a model is required which enables the schools to be distinguished in terms of certain crucial boundaries. The research itself will then proceed to determine the extent to which these boundaries are distinguishable and realizable by children in the texts they create in their respective schools. Specifically, the boundaries between subjects (discourses), distinctions between teachers, and schools as organizations, will be considered. Thus the schools, the teachers, the subjects they teach and the classrooms in which children are taught require description. The schools must be described and distinguished in terms of criteria which show systematic variation between schools. This introduction will proceed to outline the model of description and then sketch the methodological issues in its application.

The Model of Description

The model of description will be discussed under the headings of 1. Theory of Instruction, 2. School Organization, 3. Classroom Practice and 4. External School Relations.

1. Theory of Instruction

The key to the pedagogic practice of any school lies in the theory of

instruction which guides its action. The kind of learning theory or combination of learning theories a school selects in part dictates how learning and teaching are organized and what is taught - Gagne's definition of theory of instruction cited, accords with this view.

"The various kinds of learning outcomes and the ways of analyzing learning requirements are combined in a rational and systematic manner."

Gagné (1985) p.243

Clearly certain learning outcomes will be more likely to be selected for instruction in some forms of practice than in others. The "how" of learning within a particular practice will act selectively on what is actually taught, Stenhouse (1975).

The attempt to describe the schools in terms of principles of classification and framing will be based on a model that shows the relation between the theory of instruction and relevant aspects of pedagogic practice.

The theory of instruction a school selects will tend to stress either shared competences held by the children and thus stress the logic of acquisition or place the emphasis on what is to be transmitted in the school and thus the logic of transmission. This division is not always clear cut and the emphasis of the practice may well change with the age and gender of the children.

The coding of the educational transmission is inherent in the theory of instruction. Where the theory of instruction is regulated through principles of weak classification and realized through principles of weak framing, then the pedagogic practice will be concerned with integrated developmental skills. Little distinction will be drawn

between social, emotional and cognitive functioning. The weak classification is revealed in the low degree of insulation (or separation) between these domains. This contrasts with the high degree of insulation (separation) revealed in a practice governed by strong principles of classification and framing. Bloom's Taxonomy serves as a useful illustration of strong insulation between social, emotional and cognitive functioning, Bloom B.S. et al (1956).

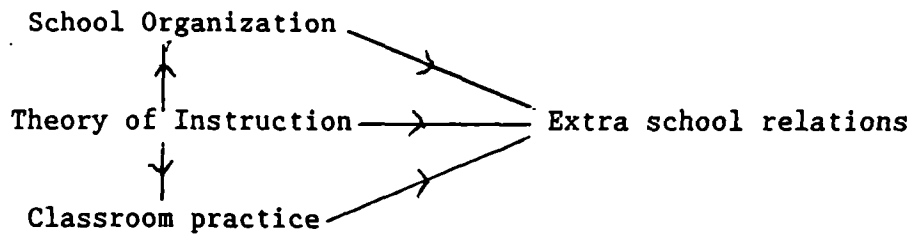
Further, the distinction between the acquisition of integrated and developmental, or separated and isolated skills has implications for the relationship between the instructional and regulative discourse. The theory of instruction also has implications for the context of learning and thus for the social relations of learning. As a consequence there will be a relation between the theory of instruction and the way in which order is created and maintained between teacher and pupil and between pupil and pupil.

Where the theory of instruction gives rise to a weak classification and weak framing of the practice then, as has been stated, the skills will be integrated and placed in a developmental perspective. The relations between teachers and pupils (and between pupils) must be such as to encourage such an acquisition. As a consequence children will be encouraged to be active in the classroom, to undertake enquiries and perhaps to work in groups at their own pace. Here the relations between teacher and pupils will have the appearance of being more symmetrical. In these circumstances it is difficult to separate instructional discourse from regulative discourse as these are mutually embedded. Where the theory of instruction gives rise to a strong classification and strong framing of the pedagogic practice here it is

expected that there will be a separation of discourses (school subjects), an emphasis upon acquisition of specialized skills, the teacher will be dominant in the formulation of intended learning and the pupils are constrained by the teacher's practice. The relatively strong control on the pupils' learning, itself, acts as a means of maintaining order in the context in which the learning takes place. The form of the instructional discourse contains regulative functions. With strong classification and framing the social relations between teachers and pupils will be more asymmetrical, that is, more clearly hierarchical. In this instance the regulative discourse and its practice is more explicit and distinguishable from the instructional discourse.

Allowance must however be made for the existence of a distinction between the official theory of instruction of a school and the unofficial theory of instruction of a particular classroom. Unofficial theories of instruction are more likely to develop when there is a low degree of central control over pedagogic practice in the school. An example of this will be studied below.

Clearly, then, a description of the theory of instruction is required as part of the description of the school's pedagogic practice. It is also clear that not only is there a relation between the theory of instruction and the instructional order (the context of the social relations of learning) but also a relation between the theory of instruction and the organization of the school, of the classroom and of the extra school relations. This may be shown schematically.



The organization of the staff, pupils and discourses (subjects) should be in direct relation to the theory of instruction. The school will be organized so as to allow the required theory to be put into practice.

2. School Organization

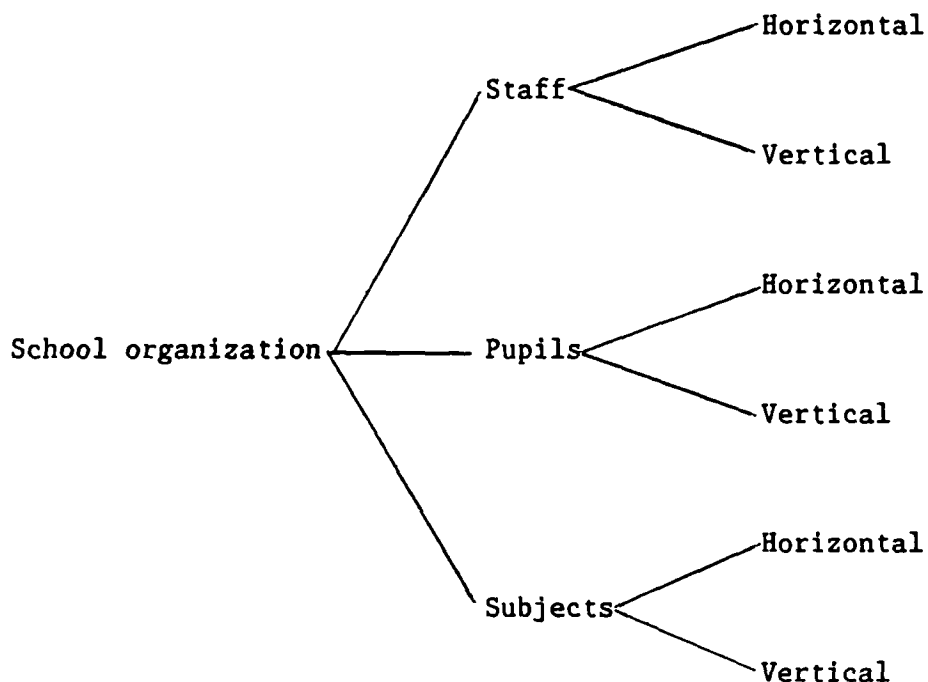
In the description that follows distinctions will be made between three levels of organization, these being the level of staff, the level of subjects (discourses) and the level of pupils. Further, each level of organization will have its own division of labour (classification) and its own social relation (framing). Within each level of staff, subjects and pupils it is possible to distinguish between a horizontal and a vertical axis. The horizontal axis refers to the degree of differentiation within a level, e.g. the degree of subject differentiation of staff and lessons. The vertical axis refers to the degree of stratification within a level, e.g. science more important than art. See Footnote 1. Differentiation (horizontal axis) and stratification (vertical axis) exert a powerful influence upon social relations and communication and thus they become indicators of values of framing.

Footnote 1

The terms horizontal, vertical and axis do not refer to orthogonal components as would be expected in studies using factor analysis. The terms are used because they are commensurate with the general model.

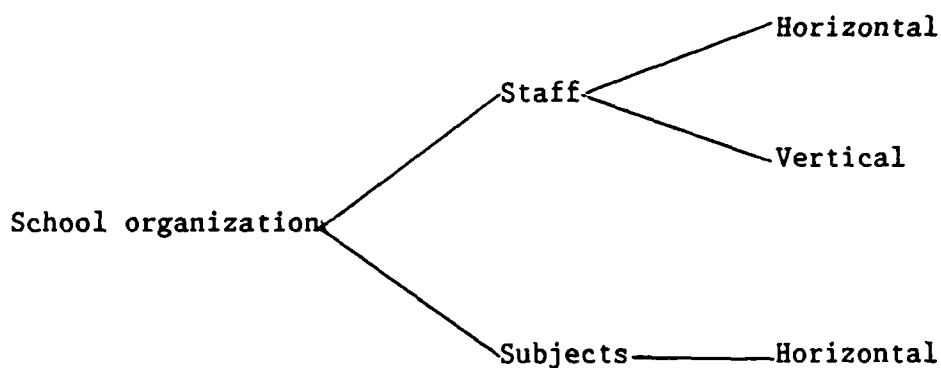
Thus the following levels of organization are open to description.

C F



In the case of the special schools described here only the following descriptors were used.

C F



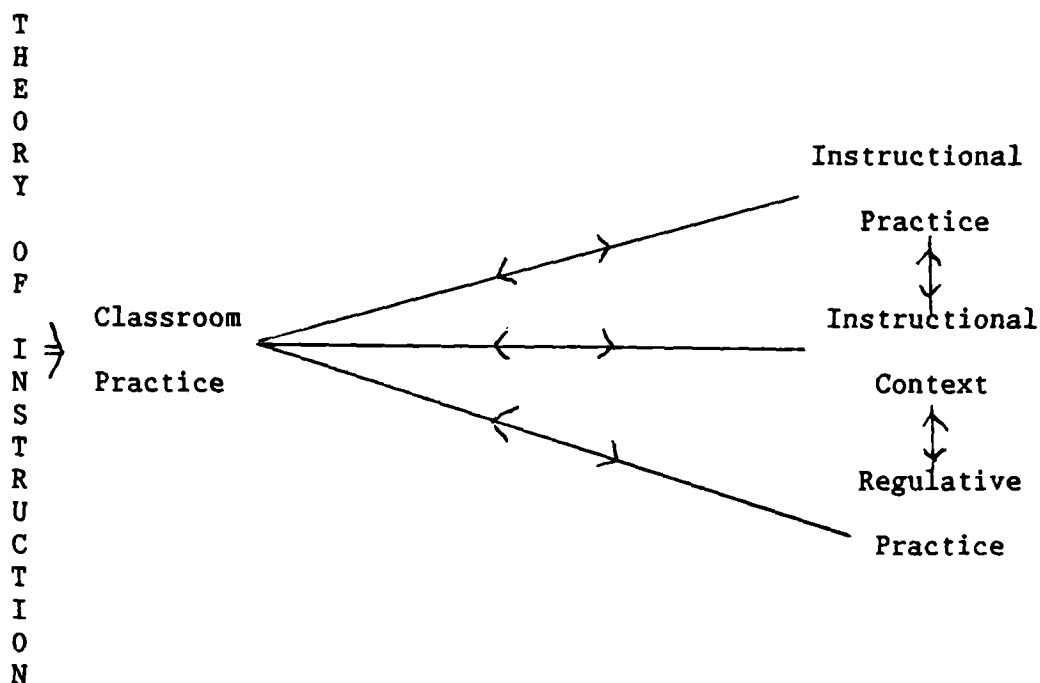
The pupil organization is remarkably similar throughout the four schools and the only difference noted was that the school with the lowest overall

values of classification and framing separates boys from girls with increasing age. The vertical dimension of subject organisation was not considered to be of importance as it does not relate to the overall research issues and again was similar across schools in as much as it could be identified.

3. Classroom Practice

At the level of the classroom it has been argued that the theory of instruction will influence the pedagogic practice and its context and thus both instructional and regulative discourse.

Classroom practice may be summarized as follows



Description of Classroom Practice

The intention here is to use classification and framing as descriptors of this level. At the level of school organization classification referred to the relation between subjects; at the classroom level,

classification refers to relations within subjects. In this case classification will refer to the way in which tasks are distributed and pupils grouped. This will constitute a description of what is called the instructional context.

A description of the framing values of the classroom practice will refer to the rules which control the social relations and thus the regulative practice of control (hierarchical rules) and also the rules which control the transmission/acquisition of the subject (selection, sequencing, pacing and criteria) and thus the instructional practice (discursive rules).

Although these rules could have different values, they may also be closely interdependent, as will be seen in the following discussion. The interdependence of this relationship may well make for some repetition in the discussion.

Classification within the Instructional Context

Any instructional practice has implications for the organization of the classroom context: that is, the principles whereby tasks are distributed to pupils and pupils are grouped whilst working on these tasks. These distributive principles of tasks and pupils create the internal value of classification of classroom practice. As these distributive principles vary in terms of weak/strong classification, so different problems of teacher control will arise and so affect the regulative practice of control.

The social division of labour of the instructional context has thus two features: a division of labour of tasks and a division of labour of pupils.

Tasks

All children in the class can be working at the same task in the same subject at the same time, or children could be working at unique tasks across a range of subjects. This represents a dimension of strong to weak classification of tasks.

Pupils

Children can be working as part of a group or, alternatively, as isolated individuals. This represents the dimension of weak to strong classification.

These two features of the social division of labour are indices of the value of the classification within the instructional context.

Framing of Classroom Practice (Instructional Practice)

Here the concern is with the value of framing with respect to the selection, sequence, pacing and criteria of the transmission (from strong framing (F^+) to weak framing (F^-)).

There is clearly a relationship between the instructional practice and the distribution of tasks and grouping of pupils.

When individual children are given individual tasks which they perform as isolated individuals within a common subject, this indicates a

strongly classified instructional context which may have implications for the framing of both instructional and regulative practice. In this situation of strong classification, the sequencing and pacing of individual progression is potentially more open to teacher control and thus strong values of framing of discursive rules. However, in that

the children are required to work on their own within such strong framing, the control over each pupil is performed in part by the instructional practice. Regulation is, in a sense, an inevitable consequence of the form of this practice. This situation contrasts with that where groups of children work co-operatively on some integrated topic or theme. Here the social division of labour is weakly classified, sequencing and pacing of the content is more under the control of the pupil (weak framing). In order to perform the work expected, the pupils have to co-operate, make decisions and go about these activities in a constructive way. It is necessary for the regulative practice to promote and sustain those aspects of social behaviour. Under these conditions instruction is deeply embedded in and inseparable from regulative practice.

Framing of Classroom Practice (Regulative Practice)

It has already been shown that there can be a strong interdependence of the framing of instructional and regulative practice. However, it is important to distinguish the forms of regulative practice. Earlier reference was made to the hierarchical rules which were distinguished from the discursive rules of the transmission. Where framing of hierarchical rules is strong, the hierarchical relation between teacher and pupils is said to be explicit and the power of the teacher would be visible in communication. Here the expectation is that such communication would be realized by positional rather than personal forms, Bernstein (1977). Where framing of hierarchical rules is weak, the hierarchical relation between teacher and pupils is said to be implicit and the power of the teacher would be less obvious and more indirect in the communication. Here the expectation is that such communication would be realized by personal rather than positional forms of control.

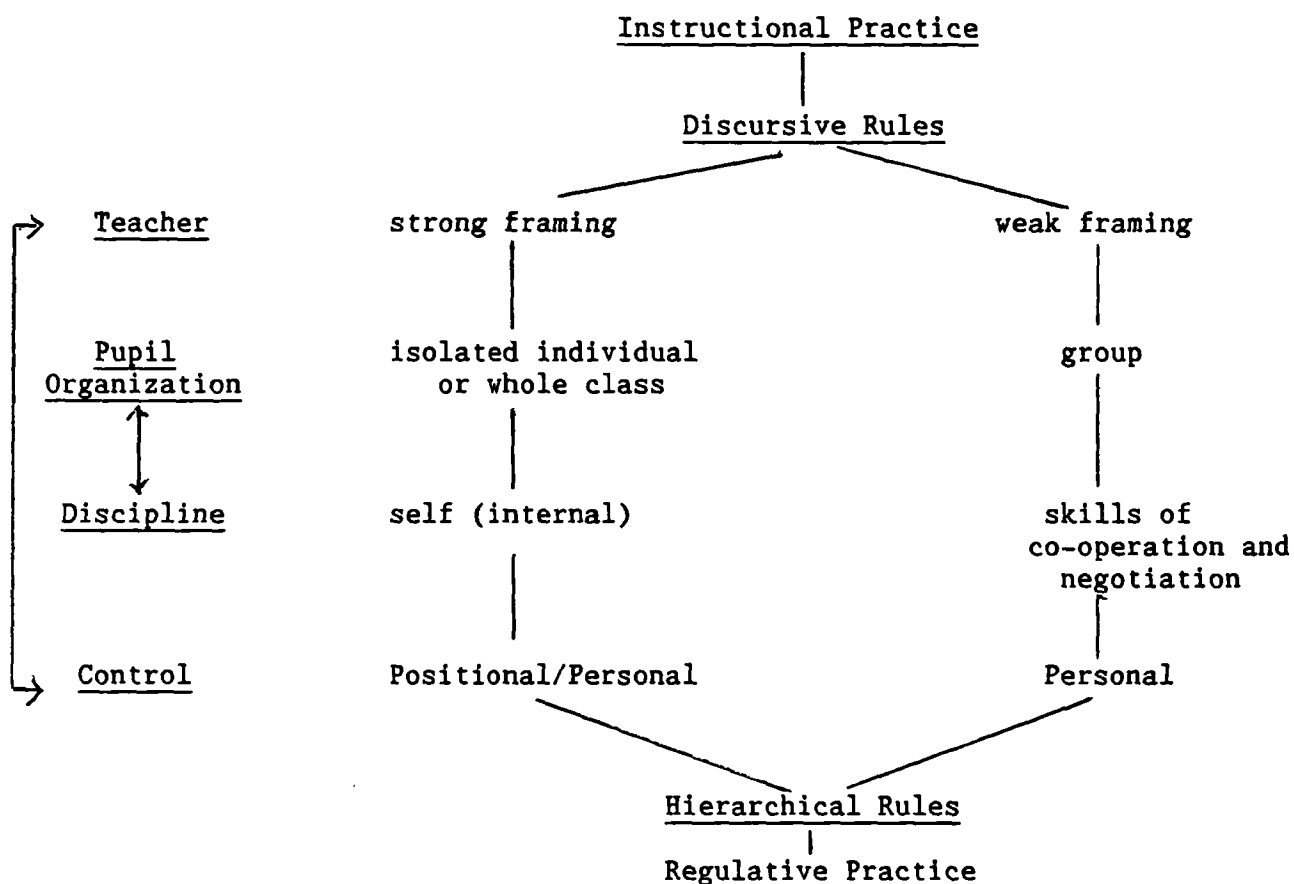
Thus where the instructional practice is governed by very weak values of framing (F⁻⁻) then the regulative practice must tend to be personal. Here explanations are given for required changes in behaviour and attitude, where interpersonal relations and intrapersonal dispositions are discussed, where the pupils may be given opportunities to enter into communications concerning control. (It may also be that a narrow range of criteria is made very explicit and is underscored, i.e. with respect to aspects of moral behaviour).

On the other hand, where instructional practice is regulated by strong values of framing over selection, sequence, pacing, criteria, that practice establishes an explicit social order, where the discipline of that order (working according to the instructional programme) has regulative functions. However, in this situation there is still the question as to how the teacher gets the pupils to do what he/she wants when they display unrequired behaviour, and so the framing of control may be either positional or personal.

The forms of control used in the four schools of the study did not discriminate between schools. During the periods of observation all the teachers operated within a personal mode of control. However, during the course of informal interviews, they all also stated that more positional controls were adopted on those occasions when the children displayed unrequired behaviour. The definition of "unrequired behaviour" varied across schools, i.e. in one school child-child communication was encouraged, in another it was discouraged. Thus it is the form of instructional practice that defines the criteria by which the teacher decides when to invoke the positional mode of

control. No empirical measures other than observations were made of forms of classroom control, as the main focus of the thesis is on the classification and framing of instructional practice.

Representation of the Relationship between Instructional and Regulative Practice



Given, then, the close interrelation between instructional practice, regulative practice and the instructional context, the following markers were selected for observation in the classrooms.

Classification

a. The level of task

The children may be seen to be working on the same task or on different tasks ($C^+ \rightarrow C^-$).

b. The level of subjects (discourses)

Additionally, if children are working on different tasks they may all be working within one subject (discourse), or some children may be working within different discourses ($C^+ \rightarrow C^-$).

c. The level of child organization

Children may be working on tasks together in groups or individually ($C^+ \rightarrow C^-$).

Framing

1. Hierarchical rules - positional/personal modes of control

($F^+ \rightarrow F^-$).

2. Discursive rules - location of control over selection, sequence,

pacing and criteria ($F^+ \rightarrow F^-$).

3. External relations of the school

The organization of the school and the practice of the classroom inevitably have implications for the external relations of the school, specifically within the following agencies:-

Parents

Employers

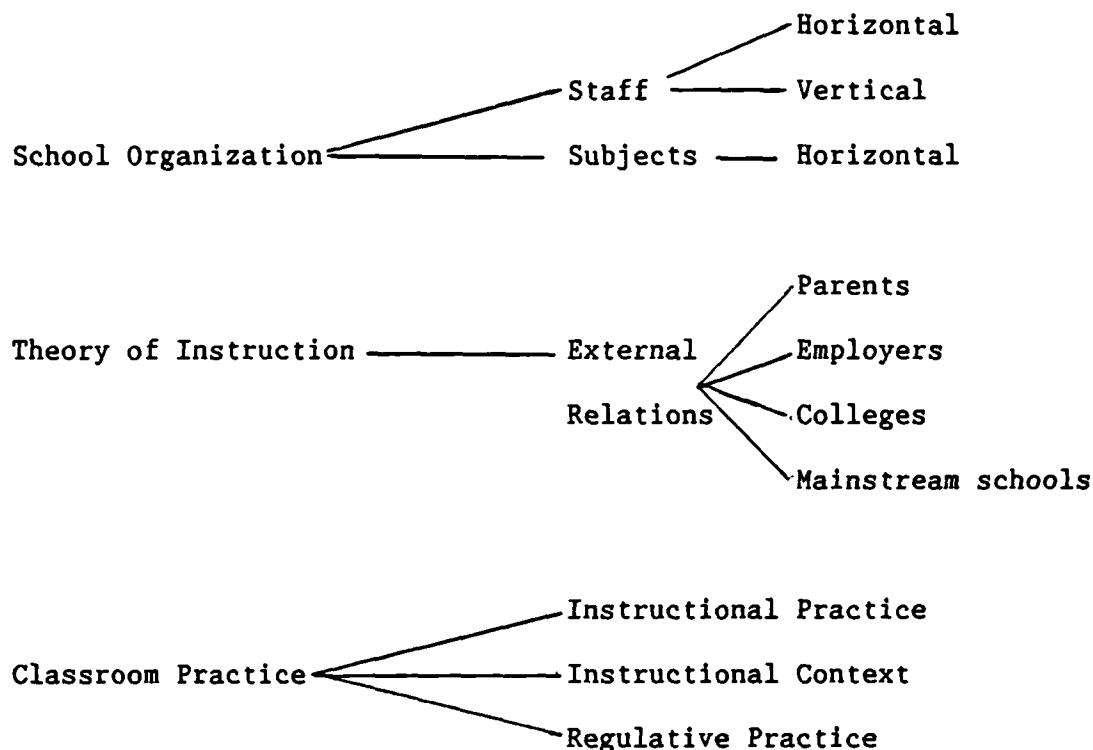
Colleges of Further Education

Mainstream Schools

The nature of these relations was the focus of interviews conducted with Headteachers and classteachers. The principles of control governing the external relations for each could therefore be assigned specific values of external framing.

The overall model of description

The overall model of description then becomes:-



The point of departure is the theory of instruction.

As Bernstein (1985) states:-

"The theory of instruction is a crucial recontextualized discourse as it regulates the orderings of pedagogic practice, constructs the model of the pedagogic subject (the acquirer), the model of the transmitter, the model of the pedagogic context and the model of communicative pedagogic competence."
Bernstein (1985) p.14

The model outlined above provides a description at school and classroom level of the organization of discourses (subjects) and the actors (teachers, children) involved in the pedagogic practice. If the object of research had required a more detailed description of any particular aspect of the practice, a more delicate analysis could have been generated. For instance, had the practice of the teachers responsible for the classes being studied not conformed with the overall instructional theory of the school then an extra level of description

would have been required. Clearly this situation is most likely to arise where weak values of framing govern the practice of teachers. Whilst there was variation between teachers' practice in the schools with weaker values of framing regulating teacher practice, the actual classes studied were taught by teachers who did adhere to the overall official school practice. Variation between teachers was studied in the investigation of marking behaviour which is described in Chapter 5.

Methodological Problems

It was possible to carry out detailed observations of the classroom practice and the organization of the schools, and as a consequence the nature of the boundaries (classification) and the nature of the social relations (framing) could be readily inferred from the ethnography. The details of these observations were ratified by classroom teachers and headteachers.

The procedure used was that each Headteacher and classroom teacher was interviewed, in an informal setting, about every aspect of the model. If there was a teacher designated as Head of Junior and/or Senior School he/she was interviewed.

Every classroom was observed on 3 occasions, each lasting half a day. These observations were conducted on a Monday, Wednesday and Friday morning. Details of the classroom practice were noted in line with the requirements of the model of description.

The information gathered in this way was collated and draft descriptions were written. These were then shown to the classroom teachers and the Headteacher. The descriptions were amended if any

party considered them to be inaccurate. When conflicting views of any aspect of the model were obtained they were both inserted into the description.

On the basis of extended informal interviews with the headteachers, statements of the theory of instruction were prepared and sent to each of the schools. These statements were then amended in line with any comments made by the headteachers, as were details of each school's external relations.

The coding of each school in terms of specific classification and framing values was based upon observation and interviewing data, together with agreed statements from which each school's theory of instruction could be reliably inferred. As will be seen later, confirmation of classification and framing value of the school was also obtained indirectly from experimental data.

Changes in the values of classification and framing will be relative to the strongest or weakest values found in the four schools. That is, if there is a weakening in the value of framing over any feature this will be relative to the weakest value of that feature within the group of four schools. Similarly, a change in framing towards strengthening is always relative to the school with the strongest framing values. The same procedure applies in cases of changes in values of classification.

The coding of this information was performed using a four level scale where ++ represents strongest and -- represents weakest. The scale was ++, +, -, -- and applied to values of classification (c) and framing (f). There are clearly no absolute measures which directly apply here -

the purpose is to use descriptions which demarcate the schools from one another and draw attention to important characteristics.

An example of the relative positions of the codings is as follows for the instructional context.

```
--
C  children working in groups or as individuals and pursuing
    different tasks
-
C  as above but similar tasks
+
C  classwork as individuals but different tasks
++
C  classwork as individuals but same tasks
```

The full set of coding rules is given in Appendix 1.

The four schools will be described in an order that relates to strengthening of values of classification and framing.

School No. 1

Treliske County School

MLD Day School Mixed

144 on roll (3/86)

1. Theory of Instruction

The Headteacher offered the staff a booklet of guidelines as to what he considered to be good teaching practice. There were no set structures for what was to be taught(i.e. the school had no reading scheme or policy on reading.) Teachers were encouraged, although not compelled to involve children in a "craft and movement saturated day with emphasis on kinaesthetic appreciation."

The Headteacher stated that there was no point in compelling staff to produce either statements of teaching intention or records of activity as this became an exercise unrelated to actual practice. His view was that it was not possible to force colleagues to teach in a particular way. There were, as a consequence, a wide range of teaching styles adopted by the staff. This point is illustrated more fully by the study of the transmission of teachers' evaluative criteria which will be detailed below.

The Headteacher argues that children should be allowed to work at their ~~own pace and level~~ within the context of an ongoing work project or theme. As there are no overall curriculum guidelines, teachers mount projects and themes which reflect their personal interests and there is no necessary continuity or progression in experience from one class to another. The children change teacher at the end of the academic year and carry forward records detailing only their social behaviour. The Head has stated that he is not concerned if the children "do the Romans five times" because it is his belief that what is important in this

form of special schooling is the "accretion of moral and spiritual fortitude" which will enable children to "have the self confidence and self esteem necessary to accept whatever life offers them in terms of things to be done and to enjoy doing them." The task is seen as irrelevant; the important message is entirely regulative. This attitude is reflected in the design of the record cards which whilst retaining sections on reading skills and numeracy are in practice reserved for anecdotal descriptions of the social behaviour of the children both in work and play situations.

This emphasis on social behaviour at work denotes the fundamentally moral orientation of the practice of the school. In terms of the model of curriculum modification derived above, this school clearly operates elements of a process based adult life focussed form of provision. The Headteacher rationalises the lack of formal attention to academic study in terms of future work or nonwork attitudes. The moral (spiritual) strength supposedly acquired in this form of instruction enables the child to cope with and enjoy its adult life whatever form that existence takes. The moral/ideological positioning of the school is the predominant aspect of its practice. The degree of embedding of the instructional discourse is such that issues for instruction become directly issues of regulation.

The statement provided below was produced as a result of the following procedure :

1. An informal interview was conducted.
2. Notes taken at the interview were written up.
3. The Head edited and modified the resulting document.

SEE APPENDIX 2

This statement echoed many of the ideas expressed in the Teachers Handbook written by the Headmaster in 1963.

"Our aim for their education should not primarily be to teach the skills of reading and arithmetic for example, in isolation, but rather to prepare our children to take their places in life by providing for them a climate which generates attitudes of social co-operation, curiosity, readiness to explore and experiment, developing a curriculum in which their interests and awareness are awakened by their creative work."
Teachers Guide to the School, page 3

This statement clearly confirms the position of the school as described above. The orientation is towards the moral/spiritual requirements of adult life developed through appropriate activity in relevant contexts.

This influence may be seen in statements such as:-

"The answer provided in this community is in terms of spiritual enhancement. Fitness for life after school is made possible for our children through encouraging skills of human social interaction."

"This is not to say that these skills can be articulated directly as they are acquired by children during the course of their development into integrated people.... The most important aspect of this aquatic experience is not necessarily the acquisition of physical skills; rather it is the personal, human and spiritual development that is facilitated."

Of the two modalities of theories of instruction this school is oriented to the logic of acquisition which privileges the competencies of the acquirer. The model of the acquirer here is one which demands active involvement and exploration in the dynamics of the pedagogic context created by the teacher. The predominance of the demand for the acquisition of relevant attitudes and values almost debars objectives based mainstream focussed work from the curriculum.

2. School Organization

a. Subjects

i. Horizontal Axis

The Headmaster advocates the principle of the integrated day throughout the school. There is no timetable as such and although each class is organized on a slightly different basis the trend is towards greater integration of subjects as the children get older.

The Headmaster's claim was that all relevant aspects of the curriculum could be integrated into one central project or theme.

"The school organization will possess a class structured basis enabling better the process of conceptualization to abound in the project centred activities. The undifferentiated notional "timetable" will permit the areas of learning to be introduced "naturally".

Teachers Handbook p.2

In practice the junior children are provided with some basic skills activities, usually focussed on a project, in the morning and general project work or physical activity in the afternoon.

As will be seen later in the text, the child who transferred from one school to another in the course of the study revealed an understanding of this form of organization in an informal interview.

"All you do is more classwork"

"it was sums and English - and something else - a piece of card and write about this animal"

He also referred to the focus of control of curriculum activities within the classroom.

"..but the kids used to say they wanted to do it and we would. Someone said they wanted to do cooking or gardening in the morning so they could do it, so the Teacher let them - so they used to get off work"

The junior classteacher reported that she was aware of the Head's wish to operate a totally project centred approach but that she found this difficult to implement. On the days when this classroom was observed the morning started with a discussion about the class project and progressed through a series of Mathematical and Language activities related to the project.

The senior children were involved in project work for the entire day. The Headmaster, the classroom teacher and the children confirmed this as did the informal observation.

Whilst the value of classification in the junior section is slightly stronger than the senior school the overall value is very weak. The control over this factor is also weak and this is revealed in the relatively high degree of variation across classes even within an age group. The values C^2 F^2 apply here.

b. Teachers

i. Horizontal Axis

Teachers do not specialize in subjects in the school. They are only specialized in the sense that they exclusively teach one class of children for an entire year. They are responsible for all aspects of the curriculum for those children. As these children are grouped on the basis of chronological age the teachers may seem to specialize in an age group. Whilst teachers tend to teach young or older children during their time at the school there is a considerable degree of movement between years. Weak values of classification operate here. There is no evidence of specialization of teachers to subjects (discourses). The actual class that a teacher takes for the year is a

matter of negotiation with the Headteacher. He tends to ask male teachers to teach classes of boys in the Senior School and women to teach senior girls and junior classes.

There is therefore a degree of control over this issue but it could not be described as strong. This will be represented as F^- . Overall for this factor the description $C^- F^-$ applies.

ii. Vertical Axis

As with any school, there is an official hierarchy which is marked by scale posts held by members of staff. However, in this school scale posts are not awarded for particular duties, they are given for what the Headteacher perceives as competent teaching, the rationale being that "a school with good teachers ran itself".

The relationships within the staff were thus highly personalised. Status was achieved through being a "good teacher". This status was achieved from two sources which could be described as official and unofficial. Official status was granted by the Head in that he let it be known whose work was valued in the school and this was often, although not necessarily, expressed in terms of scale points. Unofficial status was granted by members of staff other than those who had achieved official status, to members of staff who they perceived as being competent. This was confirmed by all those interviewed.

Status and consequently power were personally negotiated, could fluctuate and were heavily reliant on the communicative competencies of the individual teacher.

This situation may be summarized by weak values of classification and framing.

$$\begin{matrix} \bar{C} & \bar{F} \\ C & F \end{matrix}$$

3. Classroom Practice

Instructional Practice

The themes or projects that were the foundation of almost all the classrooms' activities were chosen at the discretion of the individual teacher, the choice usually being a reflection of personal interests, i.e. Fishing, gardening, going on holiday etc.

Any individual child would have a considerable degree of freedom to choose the particular aspect of the theme he/she wished to work on either individually or as a member of a small group. There were times when the whole class would work on one issue, a technique or skill, say, but this was generally very rare: "Our children are unresponsive to intensive tutorial techniques...". The rate at which a child progressed through the work was allowed as an individual difference, as was the sequence in which most of the work was tackled. Clearly here very weak values of framing apply F^{--} .

Instructional Context

The class was an important focus for the organisation of activity in the school. Here children would work either in small groups, large groups or as individuals on specific class projects for much of the working day. Whilst a child may, from time to time, engage in individual work, this was invariably related to the ongoing activity of the class. The degree of relation to ongoing activity varied across classrooms.

There was considerable effort on the part of some teachers to achieve what was referred to as a "class identity." The integrating principle of the curriculum thus served to relate individual activity and enquiry to an ongoing class identity. Thus the form of social relation demanded by the instructional discourses may be seen as serving what is ultimately a regulative function.

"Free expression, experimental and investigative work should never be the opportunity for children to form bad work habits and when all activities are purposeful, then non academic and professional demands are easily met by us and our charges. Children who are totally absorbed in work are quiet and orderly; they speak when the job demands it; move about the classroom freely; form groups in order to help one another, or work in solitude."
Teachers Handbook p.4

Thus a weak within-classroom value of classification was operational in this circumstance C .

Weak framing at the school level creates the possibility of difference between classrooms and the level of practice.

Regulative Practice

In the two classes studied in this project children were encouraged to talk freely among themselves and enter into long discussions with their teachers. Whilst the children were required to remain within the class unit they exercised considerable autonomy in actions within the classroom. The class would at times request a change of activity for the whole class unit and after negotiation may well achieve their aim.

Thus within the class there was a low degree of control over location - children would choose the activity they wished to undertake but they were required not to move between classes.

When the regulative context of the classroom is seen by the Headteacher to be ineffective, that is children are behaving in a way that he defines as deviant, then the assumption is made that the classroom

environment is not providing the necessary experiences for a child to remain calm and ordered in all situations. It is at this point that the Head will intervene both with the child and the teacher.

The relation between regulation and instruction is clearly of importance here.

"Their voices are never raised above the conversational level and the movements are never allowed to interfere with or distract their fellows. Coarse noise, misuse of materials, untidiness, carelessness in putting away apparatus, unco-operative behaviour towards the teacher or group - all these work against the achievement of our purpose, and the freedom at which we aim is achieved within a framework of deliberate and firm control, and where we are able to make quite proper academic demands on the children."
Teachers Handbook p.4

The control over the regulative practice within the classroom is high but generally operated through a personalized mode.

"children should distinguish our dislike of what they do.."
Teachers Handbook p.5

That is, the object of control is clearly marked but it is achieved through systems of direct appeal and coercion as well as through the socializing effects of instruction. The child's individual struggles with work are seen as character building and thus therapeutic. The emphasis throughout is on a regulative order which displaces instructional aims in the functioning of the school.

"Personal and social adjustment are as important as academic attainment and our efforts must be directed towards the education of the whole child rather than a more specialized and narrow improvement in reading age etc."
Teachers Handbook p.3

The regulative practice is thus personalized but with a high degree of control exercised over specific aspects of personal interaction.

Children are therefore reprimanded for rudeness, not sharing, impoliteness, ingratitude etc. Here then is a value of framing of F over regulative practice in general..

4. External Relations

a. Parents

There is no parents/teachers association and the school does not issue reports on the children. Information about children's progress is rarely committed to paper even on request from the parents. The school offers parents the opportunity of seeing their child's work and classroom on one open evening per year. On this occasion they are invited to discuss the child's progress with the class teacher. The parental attendance rate at these open evenings declines sharply as the children get older. By the time the children are in the senior school about 30% of the possible parental group attend as compared with 90% attendance in the junior school.

Should a parent wish to make an additional contact with the school they must firstly arrange an appointment with the Headteacher who will probably allow the parent to discuss the child directly with the teacher after an extended interview. The Headteacher always deals personally with parents regarded as being "a problem".

This situation is one in which there is a high degree of control over parental involvement with the school and this control is exercised by the Headteacher. A strong value of external framing is operational. This may be represented by

$$\begin{matrix} e++ \\ F \\ P \end{matrix}$$

Where F denotes framing

e denotes external

+ denotes strong

P denotes with respect to parents

b. Employers

The Head has established good relations with a range of local employers who he states "understand that our children make good reliable workers". However, he is opposed to the suggestion that work experience schemes are of relevance to the children. He argues that they are "training for work from the moment they enter the school" and that "it is the patterns of social relationship and attitude to perseverance and quality of achievement" that mark a successful worker and that this is what the school is giving the children.

"Vocational Education is not something which can profitably be left to the final years of school life. This competence for the work-a-day world will not be encouraged by calling the education 'work experience schemes', 'social competence', 'preparation for life'... The basis of occupational competence has little to do directly with workshops in school - it has everything to do with personality, integrity and adjustment."
Teachers Handbook p.6

Employers are in a sense there to receive the children after school but not to enter into relations during the child's education. Again a strong value of external framing operates

e++
F
E

Where E denotes employers.

c. Further Education

Associated with the re-organization of Special Education that is in progress at the moment is the creation of post-16 Special Educational Provision in Colleges of Further Education, Gulliford (1985). The courses offered by these colleges are heavily influenced by either the MSC or Fell and appear to be operating skills-based training within an objectives approach. It is partly because this approach is antithetical to that of the school and partly because the Headteacher believes that

his pupils require more time in school "to develop and mature", that relations between the school and college are strained.

A strong value of external framing applies in this case, where FE denotes Further Education.

e++
F
FE

d. Mainstream Schools

Over the past ten years only one child has returned to a mainstream school. The Headteacher explicitly states that this is not one of his aims. There are no established lines of communication with local schools with respect to the curriculum or pupils unless relating to transfer from mainstream to Special School.

A strong value of external framing applies again, where MS denotes Mainstream School.

e++
F
MS

To summarize, the following values of F^e apply

e++
F parents
P

e++
F employers
E

e++
F further education
FE

e++
F mainstream schools.
MS

In conclusion, there is evidence of very weak classification of teachers and subjects (discourses) with very weak framing governing the classroom instructional practice. The coding of the classroom practice may be summarized in the form $\frac{I}{R}$ as $\frac{C \quad F}{F}$

The ultimate positioning of the special school pupil in society is indicated through the strong external values of framing which relate the school to external agencies such as the family, mainstream schools, Further Education and work, and reveal the educational ideology of the school. In the case of TC the values are exceptionally strong as this school has no external relation with those agencies; even in the case of families the relation is rarely more than the legal minimum. The school appears as a specialized moral environment; external relations are sources of potential threat to this environment. In the classroom the values children have to accept are very clearly marked. The values of regulation are very clearly marked.

VALUES OF CLASSIFICATION AND FRAMING FOR PROJECT SCHOOLS

External Values

Framing	TC
Parents	+ +
Employers	+ +
F.E.	+ +
Mainstream School	+ +

Internal Values

1: SCHOOL

A. Subjects

Horizontal

Junior

Senior

TC	
C--	F--
C--	F--

B. Teachers

Horizontal

Vertical

C-	F-
C-	F-

2: CLASSROOM

A. Instructional

Junior

Senior

Context

Junior

Senior

B. Regulative

Junior

Senior

TC	
F--	
F--	
C--	
C--	
F-	
F-	

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School No. 2

Ashurst School

MLD Day School Mixed

135 on roll (3/86)

1. Theory of Instruction

An Objectives approach was used for designing and implementing the teaching programmes used in the "closed" curriculum. This approach to curriculum design and implementation was introduced to the school by M Ainscow, the joint author of the highly influential book "Preventing Classroom Failure", Ainscow & Tweddle (1979). There was a discernible degree of variance in adherence to the stated curriculum observed across teachers. The school appears to have run on a project/theme basis with additional basic skills training prior to the relatively recent curriculum initiatives being introduced into school.

"Teaching in the basic subjects is organized on an individual basis, with pupils working on common curriculum but at their own level and at their own pace."

Parents Handbook p.1

The objectives based approach is consequently presented in the context of staff who were relatively unfamiliar with the demands of such an approach.

The school is therefore in a period of transition from a theme-based approach to an objectives approach and will probably eventually adopt a mixed eclectic stance. As implied above, the degree to which this somewhat "top-down" initiative has been successful varies greatly across staff. This in itself indicates the relatively high degree of teacher autonomy which persists despite attempts to introduce overall objectives even if only as guidelines.

The teachers in the senior section enjoy a high degree of autonomy over the decisions as to what will count as valid content in their lessons. There is also an observable variation in the form of pedagogy chosen by individual members of staff in the senior section.

There is therefore a degree of confusion within the school as to the appropriateness of particular theories of instruction. Whilst parts of the school are oriented to the logic of transmission, others are oriented to acquisition.

"emphasis is placed upon the pupils' social development - pupils practice in organizing themselves and planning their use of time."

Parent Handbook p.2

The transition, if there is to be one between these two modalities, will certainly take a considerable period of time. The transformation required in the models of transmitter and acquirer, with their associated changes in models of pedagogic context and of communicative pedagogic competence, will be resisted by those who are already socialized into an existing form. The resulting tensions and confusion within the school of these transformations has led to considerable uncertainty within the staff. This was reported by the Headteacher, the Deputy and classroom teachers. The tendency has been for them to present an image of moving towards a theory of instruction oriented towards the logic of transmission yet retaining the effective practice largely oriented to the logic of acquisition. Thus whilst the core of the curriculum (mathematics, language and reading) is supposedly delivered through a mainstream focussed objectives based instructional principle, effectively a process model appears to operate across large sections of the instructional practice of the school.

2. School Organization

a. Subjects

i. Horizontal Axis

This discussion will involve separate analysis of the junior and senior sections of the school.

Junior

The Junior section of the school is based in a purpose built open plan area. The environment is divided into cookery and art open areas with smaller areas off the main area for reading and writing activities. The curriculum is described by the Headteacher as falling into the dichotomous classification proposed by Brennan (1974) of "open" and "closed". The closed curriculum of mathematics, reading, language and some science is mediated by work cards. The Headteacher argued that these work cards were not merely to be prescriptive for teachers' action, but as guidelines for teachers' thought. The open curriculum is project-based and is not work card driven. The only timetable restrictions imposed on a team of teachers are those of limited school resources (use of minibus, PE Facilities etc.). Thus for the closed curriculum there can be a degree of separation between discourses, particularly if the teacher allows the work cards to dominate his/her actions. The open curriculum is highly integrated.

Here then the relatively weak framing within the subjects allows a degree of variability of classification in the Junior School.

The overall value of classification for this section is stronger than that which operated in Treliske County. Whereas in Treliske County no mention was made by classroom teachers of specific subjects outside the "basic skills", mention here was made of History, Geography and Nature Study

$$\begin{array}{cc} - & - \\ C & F \end{array}$$

Senior Section

The senior classes are each taught in their own classrooms. The project class followed a life skills curriculum in which life skills and work preparation constituted an integrated project based approach.

"In the pre-leavers' unit the emphasis is upon social development - but in the context of future employment and parenthood. The aim is to develop sound work habits, positive personal attitudes and the social confidence to compete on equal terms with those whose difficulties have not handicapped their work at school."
Parents Handbook p.3

Children would indeed undertake some activities which could be defined in terms of a separate discourse, but this was always presented in the context of the on-going aim of preparing to leave school.

"Work in the basic subjects is continuous with what has taken place before, but the special projects include:- opportunities to work in the community, careers advice, banking..."
Parents Handbook p.3

Thus for instance mathematical experience would be focussed on enabling understanding of PAYE and VAT arrangements etc. Practical work was undertaken with an industrial focus.

As the children get older the value of classification of subject falls whilst the values of framing tend to strengthen. This may be summarized as:-

$$\begin{array}{cc} - & - \\ C & F \end{array} \quad \rightarrow \quad \begin{array}{cc} - & + \\ C & F \end{array}$$

b. Teachers

i. Horizontal Axis

There is a degree of specialization of teachers to subjects in the school. The teachers of the younger children take joint responsibility for the "closed" curriculum. However, some teachers display a preference for say, maths or language work and tend to work in a part of the open area given over to these subjects. The children will then go to these teachers for help in their tasks in these areas. In the "open" part of the curriculum, one teacher specialises in art and another in cookery, the rest describe themselves as generalists.

The teacher who runs the leavers' class describes himself as a PE specialist and yet is solely responsible for all aspects of the curriculum for this group.

There is a move towards stronger values of classification at least with younger children. The control over who teaches what is still weak. Thus the description $C^+ F^-$ applies.

ii. Vertical Axis

The Headteacher and Deputy head share an office and many of the traditional authority roles with respect to staff and pupils. Staff are given specific responsibilities for promoted posts and in the junior section this involves aspects of team planning on the one hand and subject responsibility, art, reading and mathematics on the other. The Deputy fulfils the leadership role in the secondary section and promoted posts are allocated to responsibility for the leavers' course and cookery.

There are therefore three members of staff who hold clearly marked positions of status: the Head, the Deputy and the Head of the Junior section. There is no attempt made to form a Senior Management group at which these three meet. Other members of staff have been promoted for providing what the Head and Deputy define as sound educational provision for their children.

These facts reveal stronger values of classification and framing than in Treliske County

+ +
C F

3. Classroom Practice

Instructional Practice

Children are set tasks within their administrative group at the beginning of the day. These tasks are then ordered and prioritized by the children and are completed during the day. There is a certain amount of choice on the part of the child as to which teacher's area he/she attends to perform these set tasks. Children therefore have an amount of control over whether they are taught individually or in groups depending on which area they choose to work in. This was observed in practice and confirmed by the staff.

Thus the selection of tasks is highly controlled but the sequencing, and to an extent the pacing, is only relatively weakly controlled.

Junior children are more likely to be working within different patterns of topic at any one time than are the seniors. Children from any particular administrative class in the juniors may choose very different patterns and sequences of topics within any one day.

The Junior children can choose the teacher from whom they will seek advice concerning their allotted tasks. Thus the child has considerable control over whom he/she communicates with and given the variation in pedagogy, the degree of explicitness of the hierarchical relation. However, it was observed that in the senior section the amount of child control across the curriculum is minimised because of the constraints of working in one area with one teacher. The Junior children have a considerable degree of control over the location of the studies. Messy activities are always undertaken in the large open art area.

Children in both sections of the school are given task schedules by their teachers. The child is then required to complete these tasks in a certain time.

"Work is set in the form of assignments given to each pupil individually to be completed in a given period of time."
Parents Handbook p.2

In the junior section the sequencing, selection and, to an extent the pacing of work within a subject or theme is controlled by the teacher, whereas the sequencing, pacing and organisation of the work across subjects/themes is controlled by the child.

The headteacher claims as one of his aims that there should be an amount of time in every day for every child which was allocated to the child for self-direction.

The Junior children may also, by virtue of their choice of teacher, have quite different versions of a particular topic. Given that there is emphasis within the practice of the school on using the prepared

materials merely as guidelines, different teachers interpret these guidelines quite differently and the children can be exposed to quite markedly different patterns of topics.

The senior children tend to follow a much more focussed pattern of activity than the juniors. They work together as a group on a teacher defined topic to a much greater extent. Nonetheless there are considerable portions of the day when these children are following project work, which is highly individualised.

Overall the instructional order in the Ashurst is more highly controlled than that in Treliske County. However, this degree of control is still relatively weak. The general value of framing may be written as F^- .

Clearly the school does not occupy one of the pole positions delineated in the description of possible forms of modification. Indeed, emphasis changes within the school. The movement is from a mixed process and objectives (mainly for basic skills) mainstream school focussed orientation with the junior children to a still eclectic but more adult life focussed orientation with the senior children.

The Instructional Context

Inevitably the relation between the instructional practice and context becomes close in a situation such as this where selection of instruction by the child is also a selection of context.

It is clear that children may work in groups or as individuals at any one time. The teachers stated that there was relatively little class

teaching. They argued that their focus was on the individual child's needs and in assisting the development of rationality and autonomy.

It is difficult to know who does what when children are working in groups. Thus there is a relation between instructional practice and context. Weak framing over the instructional practice has implications for the instructional and hence regulative context.

Children may be working together as a group on the same topic either sharing a set of responsibilities or working in parallel on the same theme-related task. Alternatively, they may be following individual sequences of activity which are unrelated to the rest of the children in the room. In this case, where children are working on their own on a variety of subjects in one room, one may say that the principle of classification is invisible in the classroom. The principle only becomes visible to the individual child in its interaction with specialized texts or with a teacher who will interact within the confines of specialized discourse.

There is a low degree of classification in evidence here, yet not as low as in Treliske County. This will be written as C .

The Regulative Practice

There are clear expectations for the form of teacher/pupil and pupil/pupil interaction in the school. The children are encouraged to work together and particularly in the open curriculum, pupil talk is seen as an indicator of learning activity.

"emphasis is placed upon their use and understanding of language."

Parents Handbook p.1.

The overt emphasis on social behaviour and, what is in essence, moral positioning is not evident. This will be written as F^- for the Junior children. However, with the change in teaching approach in the senior section of the school, the framing of the regulative context strengthens as teaching focusses more on appropriate forms of behaviour and interaction either explicitly or implicitly. This will be written as a change from $F^- \rightarrow F^+$ with the age of the children.

4. External Relations

a. Parents

There is a parents/teachers association, although there is no formal reporting system to parents.

Parents were encouraged to come to the school and always met the Headteacher, sometimes for a considerable period of time. The school requested that parents make an appointment when coming to the school in order that the Headteacher would be free to see them. Access to the classrooms was allowed but only with the permission of the Headteacher.

This represents a weaker value of F^e for parents than that which operates in Treliske County

$e+$
 F
 P

b. Employers

The school was in the process of developing a work experience which involved considerable liaison with local industry.

At junior level

"Links with the community become an important part of a programme which includes the use of visiting speakers and visits."
Parents Handbook p.2

At senior level

"programmes include: opportunities to work in the community, visiting speakers to talk on relevant issues."
Parents Handbook p.3

Children were required to bring their experiences of work (at Senior level) back into the classroom and this was used either as a basis for discussion or some aspect of the on-going lifeskills/topic work. Thus the world of work was seen as being a potential source of instruction for the children. Again the value of external framing is much weaker than in Treliske County

e-
F
E

c. Further Education

The school sends children to the local technical college to take advantage of facilities such as the Beauty, Care and Hairdressing department's service. Children also attend Work Introduction and Extended Education Courses on leaving the school. A member of staff has been given the responsibility of liaising with the college.

Whilst there is a weaker degree of external framing than in Treliske County the communication is by no means straightforward. No advantage is taken of link courses and members of the college staff do not visit the school.

e-
F
FE

d. Mainstream Schools

The school does not have a good record of returning children to a mainstream school setting. Once children have entered the school they invariably remain there for the rest of their school career. Five children have in fact made the transition in the last five years.

There are no links with local schools at the level of curriculum and what communication there is concerns the transfer of records on admission to the special school. This is all the more surprising as the special school uses a classroom belonging to the adjacent middle school in which to teach the leavers' class.

The value of external framing here is as at Treliske County, strong.

e++
F
MS

To summarize, the following values of F^e apply.

e+
F parents
P

e-
F employers
E

e-
F further education
FE

e++
F mainstream schools
MS

Conclusion

In comparison with TC, there is a strengthening of values of classification of teachers and subjects at junior level with stronger framing governing the socialization of the pupils within the practice of the classroom. The senior age remain similar in values of classification with a move to stronger framing. The coding of the classroom practice may be summarized in the form $\frac{I}{R}$ as follows

$$\begin{array}{cc} \text{Junior} & \frac{\overset{-}{C} \quad \overset{-}{F}}{\overset{-}{F}} \end{array} \qquad \begin{array}{cc} \text{Senior} & \frac{\overset{-}{C} \quad \overset{--}{F}}{\overset{+}{F}} \end{array}$$

The external values of framing are overall somewhat weaker, particularly with respect to employers and further education.

VALUES OF CLASSIFICATION AND FRAMING FOR PROJECT SCHOOLS

External Values

Framing
Parents
Employers
F.E.
Mainstream School

TC	A
+ +	+
+ +	-
+ +	-
+ +	+ +

Internal Values

1: SCHOOL

A. Subjects
Horizontal
Junior
Senior

TC	A
C-- F--	C- F-
C-- F--	C-- F+

B. Teachers
Horizontal
Vertical

C- F-	C+ F-
C- F-	C+ F+

2: CLASSROOM

A. Instructional

Junior
Senior
Context

Junior
Senior

B. Regulative

Junior
Senior

TC	A
F-- F--	F- F--
C-- C--	C- C-
F- F-	F- F+

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School No.3

William Hardie School

MLD Day School Mixed

140 on Roll (3/86)

1. The Theory of Instruction

In its efforts to replicate the approach of a mainstream school, this institution has placed a higher value on the transmission of subject knowledge than any of the other schools. This is a content driven system of teaching whereby classes are taught aspects of knowledge as groups at specified times of the day. The school brochure contains illustrations of typical school days for each class. These descriptions are all in terms of the teaching of specified subjects at specified times of the day.

An emphasis is placed on performances displayed with respect to amount of knowledge accrued by individuals. Although there are records of individual criterion-referenced progress, each teacher administers group tests and relays the results to the Headteacher. Thus an essentially normative regime pertains whereby relative position in a class with respect to an aspect of knowledge is taken as an important indicator of intellectual status. The theory of instruction is therefore one which is oriented to the transmission of knowledge in distinct contrast to Treliske County where the theory of instruction is oriented towards the acquisition of competences. The school selects a clearly mainstream-focussed approach with a high degree of control over the practice of the teachers for the junior children. The Headteacher stated during an informal interview that he was concerned to know

exactly what each class was being taught and by whom. A content-based analysis of the curriculum was used as a guide by every teacher in the junior school.

"..a timetable similar to that in a comprehensive school where the pupils move from teacher to teacher according to the subject taught. However where possible each class is taught the basic subjects by its own member of staff who is also responsible for pastoral care."

School Brochure p.10

The senior children are engaged in a less highly controlled adult life focussed course.

The logic of transmission predominates in the theory of instruction throughout the school. The notion of "watering down" the curriculum because of supposed intellectual deficits in the children appears to apply. The Headmaster and the classteachers agreed that they should attempt to follow the curriculum of the local mainstream schools but that they were forced to restrict the demands placed on the pupils.

2. School Organization

a. Subjects

i. Horizontal Axis

In the Headteacher's office there is a large metal wall-mounted timetable rack system. Each class has a rack allocated to it and the cards in the class rack detail the teacher, subject and times of the class timetable.

For the classes of concern in this study the following divisions obtained:-

A. Junior Class

<u>Subject Title</u>	<u>No. of Lessons</u>
Basic subjects (inc. Maths & English)	9
Handwriting	1
Swimming	1
Physical Education	1
Environmental Studies	1
Project Work	1
Television	1
Art and Craft	1
Religious Instruction	1
Games	1
Nature study	1
Drama	1
Total Number of lessons	= 20 per week

B. Senior Section

The children follow an integrated life and social skills-based leavers' programme. They are based in one room and apart from Craft and PE stay there for all activities.

Because of the relationship of teachers to subject teaching, the children are faced with a traditional style timetable. The values of classification weaken with increased age of pupil whereas the values of framing remain the same. The main focus of attention in the control of subjects at both junior and senior level is on the shape of the

timetable. Thus the number of, say, Mathematics lessons per week is controlled although relatively little attention is paid to the actual intended learning offered at any one time within a specific subject. Every class teacher is given (by the Headteacher) a timetable to follow and an outline syllabus, but detailed objectives for each subject are not given. This is in contrast to the situation in CH, details of which will be given below. This is represented as

Junior $\begin{matrix} ++ & + \\ C & F \end{matrix}$ \rightarrow $\begin{matrix} - & + \\ C & F \end{matrix}$ Senior

b. Teachers

i. Horizontal Axis

Within the staff there are teachers who specialise in:-

- a) The teaching of reading. This teacher is not allocated to a class but acts in a support role across classes. Her brief is to work with those children whom the Head considers need extra "remedial" teaching in reading.
- b) The teaching of craft. This teacher teaches an amount of basic subjects but the bulk (75%) of his timetable is taken up with teaching craft, mainly to boys, in the craft room.
- c) The teaching of domestic subjects. This teacher has a similar split in her timetable to the teacher of craft. She too teaches for 75% of her timetable in a domestic science room, mainly to girls.
- d) A specialist PE and games teacher who is also one of the teachers of the senior class.
- e) A specialist art teacher who teaches basic subjects to her class and art to most classes in the school on a one-period per week basis.

Every teacher who has a pastoral responsibility for a class also has responsibility for teaching basic subjects to those children. In this way staff become associated with children on the basis of age. This relation is strongly classified compared to the other schools and relatively strongly framed in that teachers are appointed to subject-based job definitions. This may be written as $C^{++} F^{+}$.

Vertical Dimension

The Headteacher used three criteria sets to categorize the teachers.

- a) The status of the teacher vis-a-vis scale points awarded.
- b) The age range of the children for whom they were class teacher.
- c) The subject specialism of the teacher.

There is therefore a rather complicated network of pathways by which a teacher can become a member of one or more groups in the school.

The Headteacher demands that teachers report to him, on a weekly basis, the outcomes, and to an extent the content, of their lessons. This is the only school in the sample where pupils' learning experiences are strictly regulated in time.

The senior deputy fulfills many of the day-to-day organizational roles in the school. She is particularly responsible for the organization of the timetable, room allocation and "covering for staff absence." Staff are accustomed to negotiating with this person over all organizational matters in the school.

The second deputy is responsible for discipline in the school and has an overall responsibility for senior classes in the school. This involves responsibility for senior lunch times and assemblies - the children are segregated for both.

Scale point responsibilities in the school are given for particular roles either with respect to subjects or functions, such as display work in the school.

Classificatory relations between teachers are therefore of a complex nature rather akin to those that pertain in a mainstream secondary school where there is a matrix of administrative, pastoral and academic responsibilities that constitute the positioning of staff within the school system. This will be written as $C^{++} F^{+}$.

3. Classroom Practice

Introduction

It is only in the subjects of reading and mathematics that the children work individually within a subject area. That is, unlike any of the three other schools in the project, all children in a class will be working on the same subject at the same time, the only individual variation being when individuals are allocated different tasks within a subject through the use of workcards. Children have no option as to what they study or where they study it. They can choose who they sit by in a classroom. The only point at which the teacher intervenes over seating is at times of disruption.

In this school children experience a change of subject, sometimes teacher and occasionally room according to the timetable.

Depending on their gender (boys and girls were separated for PE and games) the children could be taught by up to six teachers in a week. There are specialised rooms allocated for Art and Craft, PE, Religious Instruction and Drama.

i. The Instructional Practice

There is an amount of individual tuition mediated by work cards, notably in reading and mathematics, but the general rule is of teacher directed class group teaching.

The rules governing the selection, sequencing and pacing of work lie in the rationale adopted for progression of content adopted for particular subjects. Here children fail to complete work if they do not keep up with the class pace, apart from those subjects mediated by work cards (reading and some of the mathematics). This work will then remain unfinished.

The degree of control over selection, sequencing and pacing falls from these very high levels in the junior section to a lower level involving an amount of negotiation between teacher and taught in the senior section. This may be described as:-

Junior F^{++} $-->$ F^{-} Senior

ii. The Instructional Context

Each class tends to work on the same subject at the same time in any particular classroom. As mentioned above, children are often given the same task to work on as individuals. Children rarely co-operate in problem solving and are not encouraged to work in groups in the junior classes. In the senior classes there is a move towards more group work. The leavers' classes of William Hardie, Cadbury Hill and Ashurst are remarkably similar in many respects. The emphasis on "education for life", although appearing in slightly different forms, changes the requirements in terms of class organization. Children are encouraged to discuss issues in groups and co-operate on a number of tasks. The distinction between this practice and that of senior classes in Treliske County is to be found in not only the degree of control teachers retain over content, but also the extent to which children work together on integrated themes. In all but Treliske County, the teachers still tend to reserve sectors of the week for specific subject instruction, to require children to work on their own and to themselves define the nature of the activities. William Hardie, in common with Ashurst and Cadbury Hill, may be described as C⁺ at the senior age, the junior age being described as C⁺⁺ although this is constituted in a slightly different way to Cadbury Hill.

In summary: Junior C⁺⁺ ----> C⁺ Senior

iii. The Regulative Practice

The lessons observed were of a form whereby communication between pupils was not encouraged. Valid communication was between teachers and pupils only. The teachers made frequent requests that the children stop talking amongst themselves and get on with their work. This was not observed elsewhere.

Thus whilst in Cadbury Hill children mainly communicated with teachers about the administration of texts (work cards), in William Hardie the focus of control over communication was about the content of texts.

The Deputy Headteacher and Headteacher both stated their concern about classes which became too noisy.

"Children should concentrate on their work. They should only be talking to their teacher - never just chatting. When they start chattering you know they're not working."

Whereas in Treliske County, valid communication is that which, whilst seemingly about texts, is intended to encourage desirable social relation.

In William Hardie the regulative practice is derived from the instructional order in the junior classes and tends to assume more importance in the more interactive setting of the senior life skills classes. Thus although taking a slightly different form within each age group, the overall values of framing are equally strong. This is represented as:-

Junior F^+ F^+ Senior

4. External Relations

a. Parents

There is an active parents/teachers association attached to the school which has been effective in influencing the running of the school.

"All parents are automatically members of the Parent Teacher Association known as "The Friends of William Hardie School". Notification of meetings will be sent to you."

Introductory letter sent to parents of prospective pupils.

For instance, the association recommended that a voluntary uniform should be introduced in order that the child should not be marked as different by their peers by virtue of them not going to school in uniform. This suggestion was then implemented by the school.

"The wearing of school uniform is desirable but not compulsory.... A school tie is available from the office...it is important that every child is appropriately dressed for the range of lessons taught, so it would be appreciated if parents could ensure that the correct clothing be sent to the school on the appropriate day."

School Brochure p.6

There are two parents' evenings a year where children's work is discussed, and a reporting system. Parents can relatively easily gain access to classrooms with the permission of the Head or Deputy Head teacher.

The external value of framing for parents is weaker here than in any of the other schools in the study. It will be written as F^{e-}_p.

b. Employers

The school operates a work experience scheme which aims to place every child in a workplace at some time during their final year in school.

"The pupils are involved in a School Leaving Programme which prepares them in all aspects of entering employment. There is close liaison between school, parents and careers office

pupils are involved in work experience schemes with local industries."
School Brochure p.10

A member of staff (the senior master) is responsible for overseeing this system.

This will be written as F^{e-}_E .

c. Further Education

The school also liaises closely with the local technical college and pupils take advantage of link courses whilst still attending school and longer courses on leaving. A programme of visits to the various college departments is arranged by the school as part of the leavers' course. Members of the college staff have visited the school.

This is represented as F^{e-}_{FE} .

d. Mainstream Schools

Whilst there are no direct links with local schools and the prospect of re-integration into mainstream is not considered a serious one, the Headteacher endeavours to make the school as much like a mainstream school as possible. Thus whilst there are boundaries to communication between this special school and mainstream schools, there is parallelism in many of the practices, i.e. homework, uniform and a school report system.

The communication between institutions is non-existent apart from mainstream schools sending details of children on transfer to special

school. There is, as mentioned above, some degree of modelling without communication. The formal relations with mainstream school are quite strongly framed $F \begin{smallmatrix} e+ \\ MS \end{smallmatrix}$.

To summarize, the following values of F^e apply here:-

$F \begin{smallmatrix} e- \\ P \end{smallmatrix}$	parents
$F \begin{smallmatrix} e- \\ E \end{smallmatrix}$	employers
$F \begin{smallmatrix} e- \\ FE \end{smallmatrix}$	further education
$F \begin{smallmatrix} e++ \\ MS \end{smallmatrix}$	mainstream schools

In conclusion, there is evidence of very strong classification and strong framing of teachers and subjects at junior level. There is considerable weakening of classification of subjects with senior children. The coding of classroom practice may be summarized in the form $\frac{I}{R}$ as follows:-

	$\begin{smallmatrix} ++ & ++ \\ C & F \\ + \\ F \end{smallmatrix}$		$\begin{smallmatrix} + & - \\ C & F \\ + \\ F \end{smallmatrix}$
Junior		Senior	

The ideology of the school appears, when viewed from the perspective of the external values of framing, to be more integrationist than TC or A apart from with respect to mainstream school.

VALUES OF CLASSIFICATION AND FRAMING FOR PROJECT SCHOOLS

External Values

Framing
Parents
Employers
F.E.
Mainstream School

TC	A
++	+
++	-
++	-
++	++

WH
-
-
-
+

Internal Values

SCHOOL

A. Subjects
Horizontal
Junior
Senior

TC	A
C-- F--	C- F-
C-- F--	C-- F+

WH
C++ F+
C- F+

B. Teachers
Horizontal
Vertical

C- F-	C+ F-
C- F-	C+ F+

C++ F+
C++ F++

CLASSROOM

A. Instructional

Junior
Senior
Context

Junior
Senior

B. Regulative

Junior
Senior

TC	A
F--	F-
F--	F--
C--	C-
C--	C-
F-	F-
F-	F+

WH
F++
F-
C++
C-
F+
F+

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School No. 4

Cadbury Hill

MLD Day School Mixed

132 on Roll (3/86)

1. Theory of Instruction

The school has always maintained a functional analysis of the teaching/learning process. During the early 1970's children used programmed teaching machines extensively across the curriculum. The view of knowledge and the individualist mechanistic approach clearly allies itself to aspects of a behavioural approach.

The school now uses a modification of the Goldstein and Seigle (1971) plan which represents an interesting selection and combination of principles of instruction.

The adult life focussed objectives based rationale is translated into a mainstream school focussed objectives based form. Thus whilst children are learning academically contextualized aspects of the curriculum, they are implicitly acquiring the academic basis of life skills. The life skill rationale is certainly hidden from the children and, on the basis of interviews with members of staff, is also hidden from the staff. The effective curriculum modification is then towards an objectives based system which appears at some levels to be compatible with mainstream school. However, by virtue of the translation process from life skills into academic content certain aspects of the mainstream curriculum are not present. Environmental Education, History, Geography, Social Studies, Humanities are absent from the

academic profile of the school. The low status of creative activity was a cause of concern amongst some of the staff. Art lessons were of a formal instructional nature and this was explained by one member of staff as follows:-

"Our children do not have the confidence to be creative".

This attitude is revealed in the observation made of an art lesson and is presented in contrast to an art lesson from Treliske County. SEE FOOTNOTE 1.

Footnote 1.

Art Lesson Observed in Cadbury Hill School

The teacher read a story called "Where the Wild Things Live." She then told the children that they were going to "make pictures of the wild things."

The teacher had prepared a number of different pieces of sugar paper and proceeded to assign children to these pieces of paper.

Each piece of sugar paper had an outline of a "Wild thing" on it and most of them had sections/areas of the paper marked off. Each section contained a code number and thus could be translated by a key at the bottom of the piece of paper. The children followed the key which dictated the material to be used to "fill in" the sections/areas marked on the paper. The "wild things" were thus constructed.

The Department Head said of art lessons "we are interested in the results of art, of good productions rather than 'experiencing' the materials."

Art Lesson observed in Treliske Couonty School

The children were given different grades of paper, powder paint and a piece of foam rubber or sponge. The teacher then told the children to wet the paper and flick paint at it with the sponge. The children were encouraged to use different kinds of paper with different degrees of dampness. They were told to experiment with ways of applying the powder paint.

The teacher's concluding remarks were: "when you are satisfied with one of your results, then it is finished - show it to me."

The contrast between an emphasis on process criteria and an emphasis on product criteria is apparent.

Cadbury Hill employs a theory of instruction which aims to train children in performances; it would seem irrespective of the process by which the performance is achieved.

The move to more clearly adult life focussed work in the Senior section is accompanied by a weakening of control over the instructional discourse. The Senior classroom appears more process based. However, the way in which children behave in this context is seen as being more important.

The logic of transmission predominates in the theory of instruction here. In this school the child is seen as relatively passive in its reception of knowledge and skills transmitted by the teacher through the work card system.

2. School Organization

a. Subjects

i. Horizontal Axis

The curriculum is based on "The Illinois Plan for Special Education of Exceptional Children:- A curriculum guide for teachers of the educable mentally handicapped", Goldstein H and Seigle D M (1971). This curriculum project identified ten "life functions" which were related to ten areas of knowledge. The authors offered advice, at three age levels, as to appropriate "motivating activities" which would raise issues relevant to a particular function with respect to the different areas of knowledge.

In Cadbury Hill the integrating principle of life function is not presented directly, either to pupils or teachers. When presented with an outline of the Illinois plan, a number of members of staff claimed never to have heard of it before. The Headmaster had presented the staff with a teaching design formulated in terms of areas of knowledge rather than revealing its origins in an analysis of life skills.

This presentation takes different forms depending on the age of children, as outlined below.

A) Junior Section

Each child is allocated to one teacher for at least a year. They are also allocated work tasks in an area of knowledge by their teacher.

The child may then go to a specific area in any one of three classrooms which are linked by a corridor, to collect the appropriate materials and perform the task. If no specialist material is required, then the children return to their own classroom area to perform the task. For a messy activity or an aspect of science requiring water they may have to go to a room designated as being appropriate for such activities.

If all that is required for task completion is a work card then they will return to their base.

The "closed" curriculum is mediated almost entirely through work cards. These cards are the same for all children in the junior section, they are clearly marked and classified as being within a specific area of knowledge each requiring a separate exercise book. The teachers maintain a record of progress through the schemes for each child: see Appendix 3.

B) Senior Section

The children are based in one classroom following the same areas of knowledge as those developed in the junior section. These areas are developed in the context of the unifying theme of a life skills based leavers' programme. Activities are mounted by the teacher which are oriented towards various aspects of social and life skills training with an amount of emphasis on particular subjects within these ongoing themes. The senior children go to a specialist craft room for woodwork and pottery. Their base room is equipped for homecraft and cookery.

There is therefore a high degree of control over clearly demarcated school subjects in this institution.

"The programme of each group and its aims can, of course, be read separately but it should be thought of as a complete educational development. The use of this programme will be a very slow process and all work must be looked at, by the teacher, as a long term project. One of the basic requirements of this programme must be the ability of all adults in the school to maintain their beliefs in the work and a consistency of approach and method."

General notes in introduction to classwork programme details issued by Headteacher to all classteachers.

At this level of description it is not important that the principles by which these subjects were constructed are by and large invisible to both transmitters and acquirers in this particular form of practice.

An index of the degree of control over the subjects is given by the record cards in Appendix 3. These detail the predetermined sequences and hierarchies of instruction.

This situation may be written as

$\begin{matrix} + & ++ \\ C & F \end{matrix}$ for the Junior children

$\begin{matrix} - & + \\ C & F \end{matrix}$ for the Senior children

b. Teachers

i. Horizontal

There is a specialist craft teacher in the school. Staff specialise in teaching children at a particular age and within this age group will take responsibilities for blocks of the open curriculum. The situation

is very similar to that in the Ashurst School and will thus be shown as

$\begin{matrix} + & - \\ C & F \end{matrix}$.

ii. Vertical

Status relations between teachers are clear and highly controlled.

The organisation of the school into age related departments with staff who have specific responsibilities within each department illustrates the relatively high degree of explicitness of hierarchical relation within the school.

The headteacher occupies a study of his own. Access for all members of staff is gained via his secretary. The deputy head also has his own study. There are teachers with promoted posts responsible for the Infant, Junior and Senior sections of the school.

The Head convenes management meetings which act as the focus for the Head's managerial strategies.

Curriculum development within the school takes the following form:-

1. The Head requests that the staff outline their ideas relating to a specified curriculum area and submit these ideas to him through the relevant head of department.
2. The Head collates and reviews these ideas and produces a response to them.
3. The Head issues his response and requests that the staff implement the suggestions using the heads of department as dissemination of his ideas.

Thus the Head maintains considerable control over his school through a structure in which roles are clearly delineated.

Issues which the Head wishes to be debated will be introduced either at the level of middle management meetings or, occasionally, at staff meetings.

The Headteacher followed a military career before entering Education and states that he runs his school along the same lines as he would a regiment. A minor, although perhaps significant indicator of the strength of internal hierarchical relations is the presence in the staffroom of the Headteacher chair which no member of staff uses.

Here then is a highly controlled, structured teaching group which will be shown as

++ ++
C F

3. Classroom Practice

a. Instructional Practice

As a considerable proportion of the curriculum is mediated by work cards and the Headteacher regulates the construction in terms of content and style of the worksheets (either directly or through the senior management team), then there is evidently a high degree of control over curriculum practice. The Head argues that a child's experience of his school is not significantly affected by a change of teacher, that the curriculum materials are sufficiently "strong" to withstand changes of personnel. The Head does consult the staff as to which areas of the curriculum require attention and collects a range of suggestions as to profitable approaches. He reserves and exercises the right to modify, implement or reject any of these suggestions.

The children are given a program of tasks by a teacher, many of which are self-assessed and recorded. The focus of the teaching is on the individual child with a high level of control of the child's work scheme. The children have a limited amount of choice over when they do their work and unless needs for apparatus dictate, they stay in the one area with one teacher. The range of prepared work materials (cards and sheets) is so vast that every room in the junior section is used as a work card display area.

The criteria for selecting the work is, in part, pragmatic - what apparatus is free, in part developmental - what is this child weak at, where does he/she need to concentrate his/her activity and, very occasionally, what would he/she like to do next.

The sequencing principle of the work cards themselves relates to the Illinois plan and to established curriculum plans such as Fletcher Maths or Ginn 360 reading schemes.

Within a content area the principles for sequencing are many and diverse. The overall guiding principles for selection, sequencing and pacing of work lie within the life skills rationale of the Illinois plan.

The degree of freedom exercised by the child in sequencing his work day across eight content areas is low and he/she is invariably teacher regulated across content areas and work card/scheme regulated within content areas.

Pacing of the work is, to an extent, regulated by the child. There is, however, no question of skipping work in a sequence or of not completing a particular task. Thus a child who finds the work difficult or who is handicapped by some physical condition will take considerably longer to pass through the curriculum plan.

Clearly we have a highly controlled instructional practice which will be written as F^{++} for the Junior children. However, as will be seen from the discussion of the instructional context, the more integrated life skills approach that operates within the leavers' class leaves children with much more choice over what they do, when they do it and how long they take to complete something. This represents a considerable weakening in the framing value with age. For the Senior children this becomes F^- .

b. Instructional Context

As is implied above, the junior children tend to be taught individually about different topics whereas the senior children tend to be taught as a group on various aspects of the same topic.

Within classrooms assigned to Junior children are specialised areas with respect to the storage of materials. As individuals, the children have to engage in specific tasks in specific areas of an overall area designated as for Junior children. Within this large matrix of prepared tasks it is quite possible for every child in a room to be working on a different card and therefore area of knowledge. Thus the teaching has to be at the individual level.

In the senior section there is much more class teaching, at least at the introduction of an activity set. The relationships between various aspects of individual activities receive much more stress than in the junior section. Constant reference is made to the utility of the knowledge being transmitted.

As the Junior child's day is largely regulated by the teacher's choice of his/her work card tasks, the control of the exact location of a child's activity is effected through the worksheets. To an extent this analysis applies to communication between pupils. Only those pupils performing similar tasks will work in the same area and thus be able to communicate. It is important to note that the model of teaching employed in this school does not explicitly encourage child-child communication. The pedagogical focus is on the interaction with the instructional text, whereas the working day of the Senior section is oriented towards a life/social skills approach mediated through themes

and topics/projects. The children are encouraged to work together, as part of their social skills training in co-operation and collaboration. They follow similar if not identical topics/projects and are encouraged to become a "working" group.

It is perhaps of interest that teachers remark upon the degree of difficulty which children experience transferring from the work card mediated system to the project-based system. Teachers report that the children appear lost and "in need of work board lists."

This fall in the values of both classification and framing for the instructional discourse serves to at least temporarily confuse the children. Overall the situation is of change from C⁺⁺ to C.

Regulative Practice

As the children are governed by work cards in the junior section, the teachers become managers of an instructional system. There is very little class teaching and so teacher/pupil interaction is almost invariably concerned with the organization of tasks and, to a lesser extent, with difficulty in task completion. This was noted as a cause for concern by the Headteacher and as a practical problem by the classteachers. The amount of class teaching increases in the senior section as children discuss issues more as a group and the

influence of the work card scheme is removed. In the junior section the framing value may be written as F⁺ but it must be noted that this implicitly arises out of the discipline of the instructional practice; whereas in the senior level the instructional practice does not contain the necessary discipline and the regulative practice becomes more explicit and yet equally strong, as is the case in the junior section,

i.e. F⁺. The pedagogic discourse is dominated by the instructional discourse in the junior section. The instruction does the regulating, as distinct from Treliske County where the instructional practice is deeply embedded in the regulative practice.
instruction.

4. External Relations

a. Parents

As in Treliske County, there is no parents/teachers association nor does the school operate a report system. Parents' evenings are arranged twice a year and details of the children's progress are given with respect to the school curriculum.

Parents can only gain entry to the main body of the school after having an interview with the Headteacher. The same principle applies to any external visitor i.e. school doctor, researcher, Local Authority Inspector. The Headteacher will, in his words "make himself difficult to find" if he wishes to avoid a visit. If the Headteacher cannot be found, the visitor will not gain entry to the school.

The external framing is very strong here and thus may be written

e++
F
P

b. Employers

Senior children are involved in a work experience scheme and local employers occasionally make visits to the school. Here weak values of external framing apply

e-
F
E

c. Further Education

The school sends children to the local technical college on visits as part of the preparation for the transition to a more adult form of educational experience.

In the past special school children have also attended link courses and a considerable number (50% in 1985) of school leavers take up some form of course at the local college. College staff have visited the school and a member of the school staff has responsibility for school/college liaison.

Weak values of framing apply here

e-
F
FE

d. Mainstream Schools

Additionally children from the school attend pottery and art classes at the local secondary school. The children are selected on the basis of their individual performance in the special school and are entered for public examinations in the secondary school. Children have achieved passes at CSE and 'O' level. This practice involves a considerable amount of liaison between the staff of the special school and the staff

of the mainstream school. Staff from both schools visit their partner's institution in this collaborative venture. Additionally, the local authority adviser with responsibility for pottery has contact with the special school. As was mentioned in the introduction, this is unusual.

The value of framing here is weak in comparison with the other schools and is written as

e-
F
MS

In conclusion, there is evidence of very strong framing and strong classification over subjects at junior level which gives way to weak classification and strong framing in the senior classes. Very strong classification and framing over the vertical dimension and weak classification and strong framing over the horizontal dimension of

teachers was noted. The coding of the classroom practice may be summarized in the form $\frac{I}{R}$ as follows

Junior	$\frac{C^{++} F^{++}}{F^{+}}$	(I)	Senior	$\frac{C^{-} F^{-}}{F^{+}}$	(I)
		(R)			(R)

The evidence suggests that this school only exerts strong control over parental influence on its practice, the other levels of influence being regulated through weak values of framing.

VALUES OF CLASSIFICATION AND FRAMING FOR PROJECT SCHOOLS

External Values

Framing
Parents
Employers
F.E.
Mainstream School

TC	A	CH	WH
++	+	++	-
++	-	-	-
++	-	-	-
++	++	-	+

Internal Values

1: SCHOOL

A. Subjects
Horizontal
Junior
Senior

TC	A	CH	WH
C-- F--	C- F-	C+ F++	C++ F+
C-- F--	C-- F+	C- F+	C- F+

B. Teachers
Horizontal
Vertical

C- F-	C+ F-	C+ F-	C++ F+
C- F-	C+ F+	C++ F++	C++ F++

2: CLASSROOM

A. Instructional

Junior
Senior
Context

Junior
Senior

B. Regulative

Junior
Senior

TC	A	CH	WH
F--	F-	F++	F++
F--	F--	F-	F-
C--	C-	C++	C++
C--	C-	C-	C-
F-	F-	F+	F+
F-	F+	F+	F+

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CHAPTER 5

EMPIRICAL INVESTIGATIONS

Introduction

It is the intention of this chapter to describe the series of experiments undertaken in the course of the study.

Emphasis will be placed not only on the bearing of the results upon the research question itself, but also on the process of refining and redefining the research methods and, to an extent, the very nature of the research question.

Given the rather complicated investigative pathways of this study a short review of the component parts will now be presented by way of an "advance organizer" for the more detailed descriptions that follow. Whilst these descriptions are necessarily self-contained the relationships between the studies are of importance in understanding the evolution of the overall project.

Overall Outline of Empirical Investigations

In essence these studies were enquiries conducted within each of four schools. The studies may be considered experimental in that the same enquiries were conducted in four different schools. ~~In a sense, the~~ type of school is seen as a treatment and each school is a level of that treatment. It will become clear to the reader that the design of the enquiries conducted evolved in relation to the data collected and the initial object of enquiry also shows that this relation was dynamic. It is, therefore, not entirely helpful to analyse the studies as being solely deductive or inductive.

Descriptions of the four schools have been empirically grounded through observation, interview and reference to relevant documents which allowed the construction of coding rules. The values of classification and framing (internal and external) for each school have been obtained and specific hypotheses were formulated with respect to differences in the instructional practices of pupils. It is argued that the move from the values of classification and framing of the school and classroom to the pupils' practice is mediated through recognition and realization rules of the instructional practice. These rules are hypothesized functions of the values of classification and framing. Concretely, it was expected that children would produce different texts under different conditions of classification and framing.

There are some rules of speech in pedagogic contexts which are rarely explicitly taught and some of these were the rules of interest in this thesis. For example, pupils are rarely formally taught how to recognize and realize, e.g. to make, a statement which counts as an art statement or a scientific statement. It is even rarer for them to be given explicit lessons in their difference. A series of experiments was constructed to investigate which groups of children, under different conditions of classification and framing, were able to recognize and realize art and scientific statements.

1. The Pilot Study

The object of this study was to investigate whether children in each of the schools could and would produce language that their teachers would recognize as being appropriate to two instructional contexts. The contexts chosen for study were those of art and mathematical/scientific studies. This selection was made because these contexts allow the maximum observable differences.

It became clear during the observations of the schools that science did not exist as a separate subject. This is not unusual in the case of special schooling, as was noted by the Inspectorate.

"This report highlights the precarious existence of science in many Special Schools."
HMI (1986) p.12

Scientific activities did take place but these were incorporated into the practical aspects of mathematics lessons. The two instructional contexts were therefore art and mathematics incorporating science throughout the entire course of the experimental work.

Given the initial problem of attempting to measure school differences with regard to the criteria of appropriateness of utterance, there was no clear technique available from previous studies. The pilot study approached the question of measurement of this criterion by deriving test items and measures outside the school contexts and then using the devices inside all four schools in a uniform way. Children's responses to tasks of description were constrained by a limited choice of descriptors. This choice of descriptors was then compared across children between schools.

The procedure involved the creation and subsequent presentation of eight tasks of description. The set of tasks was made up of four objects to be presented physically and the names of four items presented verbally. For each task a set of descriptors was derived using students from a college of Further Education S.E.N. class as providers of suitable words. Each task of description (physically presented or verbally presented) had a set of eight possible descriptive words associated with it. Of this set of eight words four were designated by the students from the F.E. College as being artistic and four scientific. The children in the schools when presented with a task of description were asked to choose four words from the set of eight provided that they felt best described the task in the context of the particular lesson in which they were engaged. All eight tasks were presented twice, once in art and once in mathematics. A measure of correctness was arrived at by comparing the child's choice of words with the designated category of those words.

The task was then one of choosing appropriate words for a context from an externally categorised and defined choice set. Whilst the procedure generated a considerable amount of interesting data it also generated an amount of criticism of the procedure. The analysis of the data provided indicators of a relation between organizational structure of the school and communicative competence of the pupils. The general trend of the data was towards more correct in-context responses by pupils in schools with stronger overall values of classification and framing.

Questions raised by the pilot study may be summarized as follows:-

Was it valid to import definitions of lexical appropriateness into a particular lesson from another institution?

Was the procedure producing data which related to an artefact rather than the object of the study?

Serious consideration of these and other questions forced changes in approach. Nonetheless the implications of the data were exciting and provided the incentive to redesign both the procedure used and the task materials.

2(a) Redesigning the Procedure

Whereas in the pilot study the judgement was as to which category (art or science) the description of the task belonged, a new procedure was designed which involved teachers as the judges. Equally important was the change in procedure from using arbitrarily chosen tasks which did not necessarily belong in the classroom, to a procedure which used tasks which were selected on the basis of their ecological validity.

The decision to use teachers as judges was reached as a result of frustration in attempting to derive objective criteria which could be used in evaluating and so categorising the childrens' descriptions of tasks, the reasoning being that whilst there must be criteria which influence the categorisation process, these criteria are part of the dynamics of the classroom. The criteria are used by teachers in the course of their daily practice and are not necessarily available to tasks in the instructional context. The criteria may certainly vary across classrooms and schools. It therefore seemed sensible to use teachers as the judges of the childrens' descriptions of the tasks.

The implicit understandings of teachers could be used to avoid the necessity of explicating the evaluative criteria.

For the purpose of creating and validating the procedure tasks were selected in an informal way. These tasks were of the description of selected pictures.

The pictures were shown to the children in both instructional contexts. The children were asked to describe the pictures in a way that would satisfy the evaluative criteria of the particular instructional context. The general form "What would teacher like you to say about this picture in this lesson?" was used. Rather than using predefined sets of descriptors as in the pilot study, each child's statement was judged by teachers. The descriptions offered by the children were taped and transcribed. One teacher from each of the two schools was then asked to assign the statements to the categories art or science or neither. That is they were implicitly asked to draw on their own criteria of what counted as appropriate use of language in specific lessons.

Comparisons of the teachers' judgements enabled reliability measures to be calculated. These were found to be greater than 80% in all cases and were taken as acceptable. The general trend in the data was again towards greater discrimination between lessons in terms of pupil responses in the school (CH) with the stronger value of classification and framing. This data was drawn from a limited sample but was considered to be encouraging because the procedure enabled the collection of data of increased validity, through using teachers as judges, and increased reliability in that two teachers agreed on the designation of responses.

2(b) Redesigning the Materials

Rather than use arbitrarily chosen tasks it was decided to design a procedure which would validate the selection of tasks.

Instead of objects and imaginal tasks, pictures were selected as tasks, the argument being that children were familiar with being presented with pictures in both the instructional contexts of the schools. The object of the redesigning exercise was then to select picture tasks that, whilst being familiar in form to the children, were capable of eliciting recognisably different language. Children from the schools were involved in a procedure in which they had to guess whether a child was talking about a picture like a scientist or an artist. The details of this procedure will follow; the result of it was the production of ten picture tasks all capable of eliciting recognisably different language from the target group of children.

Having derived a new experimental procedure and a new set of tasks the next step was to use these in what would become the main study.

3. The Main Study

These tasks and procedure were used in the four project schools with ten children in each of two age ranges. Only boys were used as it was considered that the differential expectations in classrooms which are gender related would serve only to confuse an already complicated issue. Care was taken to ensure that children were familiar with the demands of the experiment, at ease in their own classroom and familiar with the experimenter. They were presented with each of the ten

pictures in both Maths and Art and asked to describe them using a standard question format.

The junior age data was collected from presentations in both contexts. That is that each junior aged child in the study cohort described each picture task on two occasions at an interval of six months. A teacher was then asked to categorise the descriptions as representing a valid statement in either Maths or Art lessons or, if they found difficulty in doing so, as being neither. Whilst the teacher completed the task of categorisation and the results were in general in concordance with the trends exhibited on previous experiments, that is of a relation between school structure and pupil discrimination, certain difficulties were noticed.

The teacher observed that he found considerable difficulty in allocating some descriptions to the categories Art, Maths or Neither, particularly those from Treliske County (C- F-). He complained that it was very difficult to decide in the absence of a comparison for the child. This observation led to a further modification of the procedure by which descriptions were judged. After all the data had been collected for both age ranges in both contexts, the descriptions were paired. That is, for each child and task the two descriptions, one elicited in a Maths lesson and the other in an Art lesson, were placed side by side. The teachers were then asked if they could tell the difference between what the children had taken to be suitable Science/ Maths and Art statements and if so, which was which. They were also asked to indicate which aspects of the descriptions had prompted their decision. This procedure produced data of the form :

Noted

Coding 1 = Distinction noted
0 = Distinction not noted

Correct

Coding 1 = Correctly assigned
0 = Incorrectly assigned

The judgements about the nature of the eliciting context were now being made on the basis of comparison between contexts for each child on each task. In this way, the quest for absolute criteria was abandoned in favour of a relative judgement. Two teachers were used as judges on all the collected data. A variety of reliability calculations were performed and these were taken as indications of a high degree of inter-observer agreement. The data were analysed using analysis of variance and discriminant function analysis. Statistically significant school effects were noted. The indicators noted by the teacher judges were collected and grouped and analysed for evidence of general trends in patterns of markers used. Within each school high and low "achieving" children were identified, the definition of achievement being based on the number of correctly judged descriptions.

4. Children as Judges

The procedure in the main study had produced data which indicated that children varied in their ability to produce recognisably distinct, contextually defined descriptions as a function of their school placement. It also indicated that there was variation within the schools and that this variation was also a function of the school. Just as it was of interest to note these variations in ability to produce descriptions it was felt that the ability to recognise statements was worthy of investigation. That is, how would high and

low scoring children from all schools perform as judges?

A sample of childrens' statements, and their teacher judgements was drawn from the main body of the data. The children selected were those judged by their teachers as being good, those judged as being poor and those representative of the average level for each school at discriminating in terms of their responses to the tasks of describing pictures in the lessons. The statements were presented to children, drawn on the basis of their scores, from all four schools. These children were presented with exactly the same task as their teacher judges i.e. to state:

1. whether they could distinguish between these paired descriptions
2. the context in which each statement had been elicited.

It appeared from the results that all but one (very low ability) child could recognise the originating contexts to a degree of accuracy similar to that of their teachers.

All the other children were able to discriminate between the statements of their peers and proceed to classify them in terms of the lessons they were supposedly made in, as accurately as had their teachers.

5. Length of Descriptions and Language Tests

During the course of transcribing the massive amount of data involved in this study it was noted that there was considerable variations in the length of the descriptions. An analysis of this data was conducted and school, age and practice effects were noted.

In order to establish whether the effects were due to some bias in the sample of the childrens' expressive language ability a series of tests

were conducted in two of the schools. Two measures of expressive language and WISC IQ scores were analysed and no school effect was found. Equally when social class factors were investigated across schools no significant effect was found.

6. Individual Child Transfer

Just as the project evolved in response to the data collected and procedural difficulties that were encountered so an unexpected opportunity arose. A child transferred from Treliske County (C- F-) to Cadbury Hill (C+ F+). A study of changes in response to the picture tasks in relation to changing schools was planned. On the child's transfer children with similar WISC IQ profiles and social class rating were identified in each of the schools involved. Each child was presented with each picture task in both contexts over a three week period. After a further period of six months the procedure was repeated. The data collected was presented to two teacher judges. The results clearly showed a change in performance with change of school and stability within schools.

7. Picture Displays

As a result of spending a considerable amount of time in the project schools, various aspects of their everyday practice became familiar and contrasts between the schools became apparent. Of particular note was the way in which art work was displayed in the schools. During one week of a Spring Term all the display work in all four schools was photographed. A representative sample of work from two schools (Treliske County (C- F-) and Cadbury Hill (C+ F+)) was drawn from the slide collection and printed.

Whilst it was possible to draw conclusions, as an informed observer of events, about the importance of the differences in these display types, it was decided that an investigation of children's perceptions would be conducted. Using a modified form of personal construct analysis children were interviewed about the display photographs. A considerable and surprising level of sophistication was revealed. The implication was strongly that these displays were acting as relays of underlying organisational principles of the schools.

These principles appeared to be operating at a variety of levels of influence on the child's performance in the schools in question. The case for some formulation of a relationship between structural principles of the school and individual performance appeared to be strong.

In order to investigate whether this formulation would have relevance at the level of the class organisation, one further investigation was conducted.

8. Children's and Teachers' Marking Criteria

It was noted that within one school, Treliske County (C- F-), there were two teachers with very different approaches to marking childrens' work. In very general terms, one teacher appeared concerned to transmit a specific body of knowledge to children through a highly visible pedagogy Bernstein (1977). The other teacher appeared to be concerned to assist the development of his pupils through the interpretation of the meaning of their work, this form of practice being much closer to Bernstein's (1977) description of an invisible pedagogy. In order to investigate whether children also noted these differences a small experiment was

conducted. Children were asked to mark samples of their own work and their approaches to marking were compared with those of their teachers. Again it appeared that there was a strong relationship between a child's performance and the principles which underlay the organisation of the classroom context in which the child was being taught.

Pilot Study

Introduction

The original interest in studying school effects clearly had to be focussed in a theoretical context and applied using a research methodology which was commensurate with the theory.

The four special schools described in terms of their respective values of classification and framing at a level of definition considered appropriate to the research were to be examined in terms of the pupils' ability to discriminate between different texts. The object of the enquiry was to investigate the relationship between the social division of labour and social relations of learning in these schools and the discrimination of individual children. Measures of pupil behaviour were required that would enable this hypothesised relationship between socio-institutional structure and individual discrimination to be examined.

The intention was to demonstrate how different subject contexts generate different criteria of competence and to develop measures of these differences. This pilot study was to be the first strategic attempt to develop tools of evaluation of curricula at the level of criteria of competence rather than at the level of achieved performances through conventional objective testing. That is, rather than sampling performances of the educational process, attention here is directed towards central elements of pedagogic transmission which generate these performances.

The requirements of the enquiry are such that measures of tacit learning must be developed. The effects of institutional structure are clearly not directly and formally taught to children, they are tacitly acquired through the experience of working within a school. The measure of pupil behaviour cannot then be of the order of a test related to formal teaching but must be derived from the nature of the organizational structure itself.

The competences of interest are then those pertaining to the recognition and realization rules which are evidenced in classroom talk. The classrooms themselves have been described in terms of the power relations between categories of knowledge and people and of the principles of control operating within elements of the system. These descriptions are hypothetical models of the social divisions and social relations of labour within the schools. The hypothesis is that within each of these institutions different forms of communication and discrimination will be privileged. The more specialized the structure, the more specialized the work within the structure becomes and thus the demand for specialized communication about the work increases. Also the more highly controlled activity within specialisms becomes, the more the definition of what counts as appropriate communication rests with the teacher and/or the specialism.

This then allows an examination of the realization rules which govern the production of classroom talk. Different categories of knowledge make differential demands on language. Knowing when, where and how to talk constitutes an important aspect of behaviour for the child who wishes to appear competent in a mainstream secondary school, Gillham (1986), Barnes et al (1971). Brown and her colleagues have shown

clearly that the executive control aspects of metacognition are trainable, Brown (1984). This investigation is concerned to discover whether children in all four schools have acquired the realization rules for specific instructional discourses.

Competence in the realization of linguistic criteria involves at least two component competences. The child has to initially recognize the demand and then respond appropriately to it. That is, can the child "hear the voices" of the different subject on the one hand and construct appropriate messages within that voice on the other.

The focus here on the child's ability to realise the criteria for the production of texts which satisfy the principle of evaluation gives rise to specific experimental requirements. Firstly, contexts are required which on the one hand will generate different texts and on the other produce variation across the schools. Secondly, the grounds of the criteria of evaluation must be identified.

Studies of Speech in Context

Whilst there have been many studies within Bernstein's model of children's speech in a range of different contexts (Cook-Gumperez, 1973; Adlam, 1977; Holland, 1981; Brandis and Henderson, 1970), only two have approached comparisons of school contexts.

Hepker (1975) conducted a study of the principles which regulate the transmission of criteria created in a subject, Sociology, in the setting of an 'A' level GCE course. It was argued that the differences in the essays written by prospective students of English Literature and those written by prospective students of Sociology should reveal the rules

which for the prospective sociologists define the subject. In attempting an exploration of the principles of transmission by a study of their symbolic manifestation in "marking", she discovered that the subject areas chosen for investigation, i.e. English and Sociology, are not sufficiently different to allow for the comparisons intended.

This important point is utilized in the design of the present study which will examine the widely separated contexts of Mathematics and Art.

Heckenberg (1974) compared two groups of pupils studying English which differed in terms of the pedagogical philosophy of their teachers. Serious design problems and lack of analysis of the organisational settings in which the teachers were operating negated the possibility of satisfactory results from this study.

The experimental approach used here entailed the study of the selection of words considered appropriate by children in the two experimental contexts, Art and Mathematics/Science. Clearly a task of simply selecting Mathematical/Scientific or Artistic words was too complex for the children concerned. The selection was made with reference to a particular task. There were four hypothetical tasks and four objects all of which required the selection of descriptors appropriate to the respective instructional context.

The hypothetical tasks were of the form:-

"Choose the best words to describe x in this lesson",
where x was not directly presented as an artefact. For instance, the child may be asked to describe "water" without water being present. The object tasks were directly presented to the children. As the source of

the principle of evaluation was to be externally derived, the procedure involved the children choosing descriptors from a set of words which had already been externally categorized.

Here then was a study that examined the nature of preferred lexical choice by children dependent on the type of lesson they were in. The two phases of the experiment consisted of the derivation of the experimental materials and their subsequent use.

Part I

The construction of tasks of appropriate lexical choice

Subjects

A group of 12 MLD school leavers from the range of local MLD schools on a course (run by the Manpower Services Commission) at the local Technical College. These were selected because they had only recently left the group of MLD schools to be studied. Their experience of schooling was considered to be similar to that of the children to be studied. Their selection of words should be those that were within the experience of the school children.

Apparatus

8 stimuli:-	4 actual:	A seashell
		A piece of turned metal
		A drinking glass
		A wooden toy lion
	4 imaginal:	water
		a flower
		a bird
		fire

Procedures

The students were asked by their technical college teacher to produce as many words as possible for each of the eight stimuli. The words thus collected, the groups were asked to assign them to either artistic or scientific type categories. (The teacher gave an introduction to this). The four most popular (by written vote) of each type were then printed onto blank playing cards for use in the experiment. The results are presented in Appendix 4.

Part II

The use of the above tasks on the experimental schools:-

Subjects

Ten children, all boys between the ages of 11.5 and 12.5, were chosen from each of the project schools.

Procedure

The boys were assigned to the study at random. These children were then assigned to two groups at random. Thus there were two groups (A & B) of five boys for each school.

The eight tasks were then assigned at random to particular groups in contexts as follows:

The contexts were

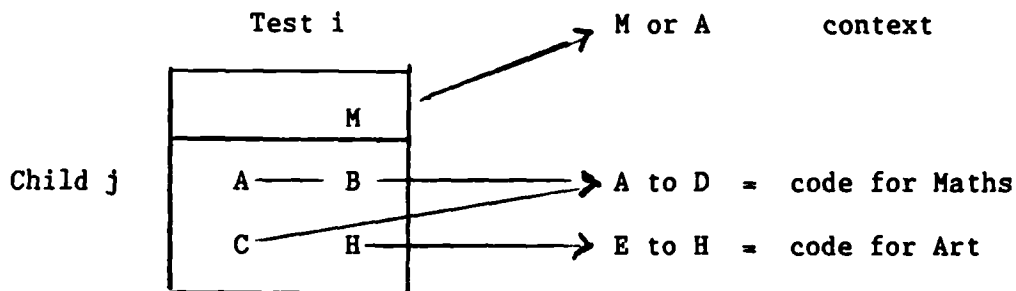
1. Times of Mathematical activity (M)
2. Times of Artistic activity (A)

TASK	1	2	3	4	5	6	7	8
GROUP A	M	M	A	A	M	A	M	A
GROUP B	A	A	M	M	A	M	A	M

Associated with each stimulus was an eight card set of playing cards each with a word (from Part I) typed on it and coded on the reverse side. Four of the eight playing cards had been coded (in Part I) as "artistic" and the remainder as "scientific".

For each task the children were asked to choose the four most appropriate words (on the cards) to describe the stimulus in the context of the lesson.

The cards were always shuffled by the children before each task was attempted. The words were read by the experimenter at least 3 times in random order. The same introduction to the tasks was used in each context and school. Each task was recorded in the following form:-



Each child was then scored on the basis of number "correct" for each task. Correctness was seen as giving a maths type response in a maths lesson and an art type response in an art lesson.

For each child a record was kept of their performance on each task in both contexts. For each child on each task data of the following form was collected.

		<u>Response/Answer</u>	
		Maths	Art
<u>Lesson Context</u>	Maths		
	Art		

The data is then summarized in a bar chart of mean number of responses over each combination of context and response for each school in Figure 2.

Results

SCHOOL	NUMBER OF MATHS IN MATHS	NUMBER OF ART IN ART	TOTAL CORRECT IN BOTH
William Hardie	114	88	202
Cadbury Hill	105	76	181
Ashurst	100	67	167
Treliske County	84	78	162

The total scores summed over children and tasks within schools are given below:-

William Hardie

	<u>Maths Answer</u>	<u>Art Answer</u>
Maths lesson	114	46
Art lesson	72	88

Cadbury Hill School

	<u>Maths Answer</u>	<u>Art Answer</u>
Maths lesson	105	55
Art lesson	84	76

Ashurst School

	<u>Maths Answer</u>	<u>Art Answer</u>
Maths lesson	100	60
Art lesson	93	67

Treliske County School

	<u>Maths Answer</u>	<u>Art Answer</u>
Maths lesson	84	76
Art lesson	82	78

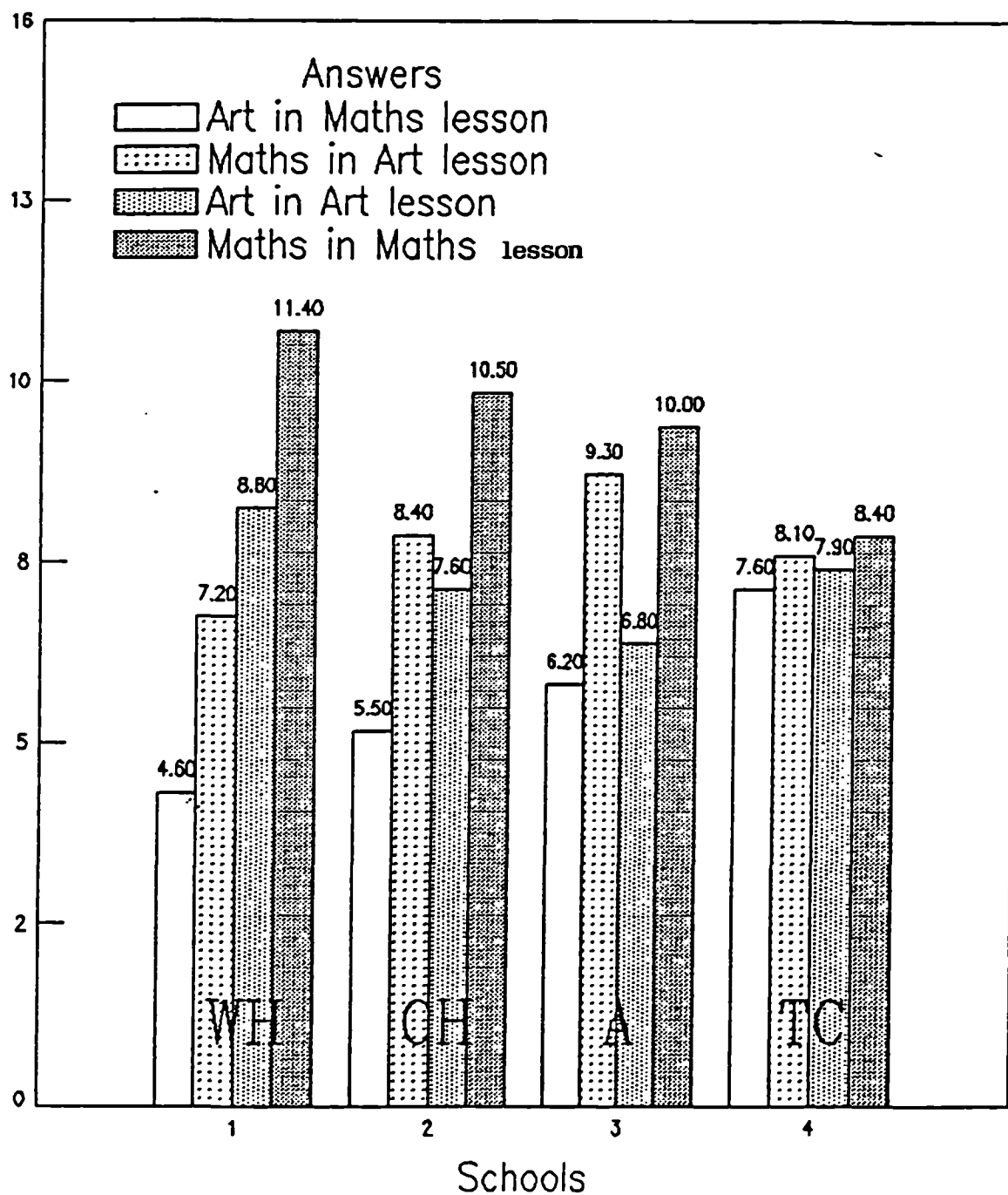
These results are displayed in Figure 2.

Figure 2

Number of responses

BY LESSON AND TYPE OF ANSWER FOR EACH SCHOOL ..

No. of responses



norhrd.gph

The tasks were presented to the children in a random order. The ratio of Maths type answers to Art type answers was calculated for each child on each task in each lesson context. A one way analysis of variance with the ratio of Maths to Art answers as the dependent variable and school as the independent variable was performed with repeated measures on the ratio in each lesson context. The random selection of children and random presentation of tasks enabled their effects to be consigned to a constant term.

Analysis of variance table for a repeated measure of ratio of Maths to Art type answers in two lesson contexts for each subject with school as the independent variable

Between Subjects

Source	SS	DF	MF	F	Sig of F
Within cells	2.50	36	.07		
Constant	177.05	1	177.05	2550.99	0.0
School	5.66	3	1.89	27.16	0.0

Within Subjects

Within cells	6.13	36	.17		
Lesson	9.76	1	9.76	57.33	0.0
School by Lesson	7.8	3	2.6	15.27	0.0

The means and standard deviations of ratio of Maths to Art answers within schools and lessons

School		Maths	Rank	Art	Rank
WH	Mean	2.647	1	0.973	3
	S.D	(0.588)		(0.510)	
CH	Mean	1.933	2	1.127	2
	S.D	(0.307)		(0.238)	
A	Mean	1.657	3	1.423	1
	S.D	(0.333)		(0.269)	
TC	Mean	1.111	4	1.030	4
	S.D	(0.112)		(0.082)	
<u>OVERALL</u>		Mean		1.138	
		S.D.		(0.349)	

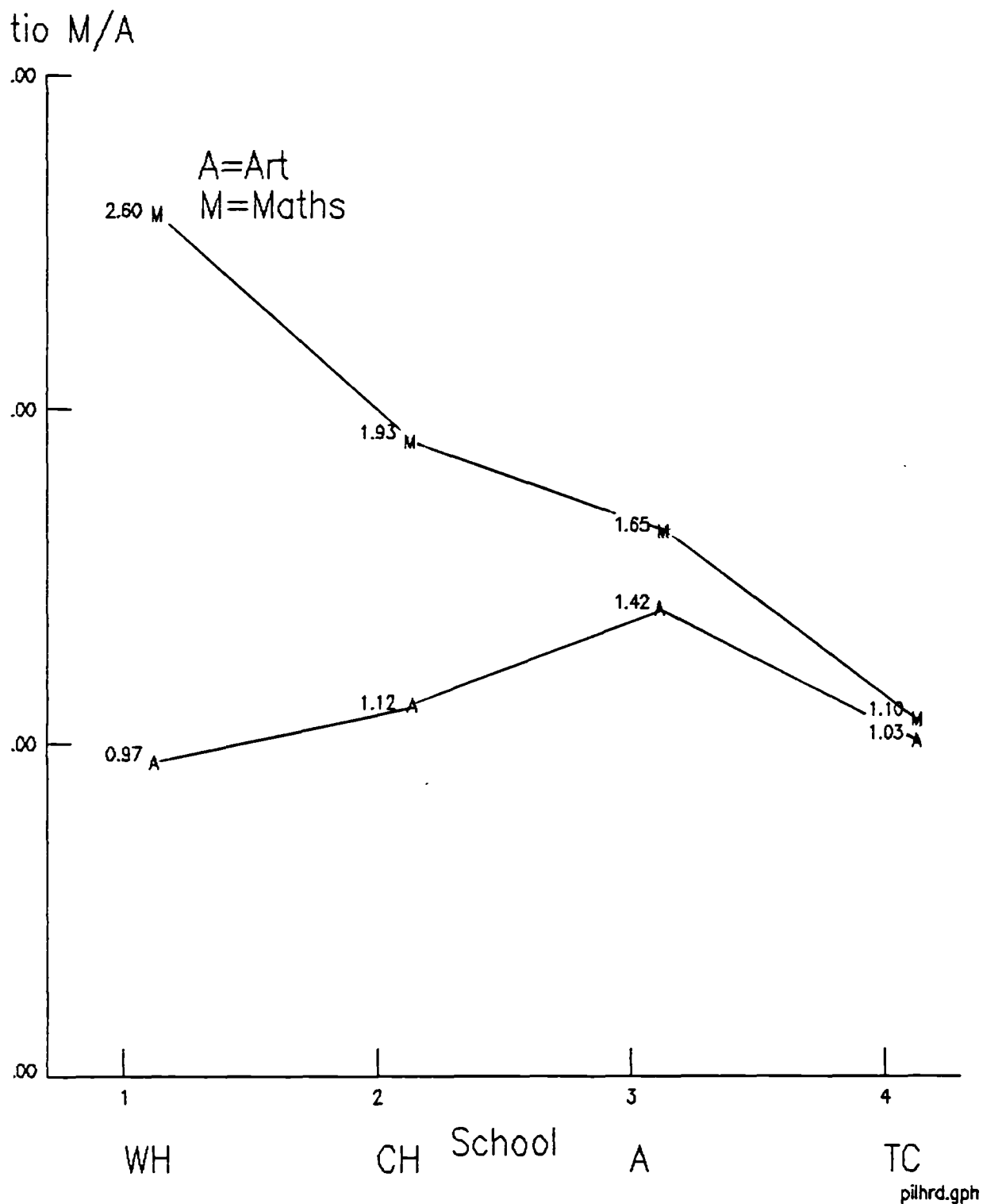
These results were indicative of some of the design problems with this investigation. As the average ratio of Maths to Art type answers exceeded unity in both lesson contexts the tasks appeared to have been biased towards the selection of Maths type answers. Within Maths lessons the trend in the data is towards a higher ratio for schools with strong hypothesised values of classification and framing over subjects and a lower ratio for weaker values. The responses in Art lessons do not support this trend.

As shown in Figure 3, the significant school by lesson effect revealed in the differential in relative rankings of schools across lessons was possibly due to the over selection of answers designated as being of a Maths type. The bias in the design towards the selection of Maths type answers constitutes a major difficulty in the interpretation of these results. Whilst the trend in the data for Maths lessons was in accord with the hypothesis underlying the overall relative codings of the descriptions of schools, the Art lesson data generated contradictory implications. Thus whilst the significance of the school effect was indicative of a relation between school structure and individual response to tasks, the exact nature of the relation remained elusive.

An alternative description of the data was sought through the examination of differences between the number of responses of the same category as the lesson context and those of a different category. That is, between those responses judged as correct by the criteria of the investigation and those judged as incorrect; where Maths type answers in Maths and Art type answers in Art are correct and all other combinations are incorrect.

Figure 3

Pilot Study. School x Lesson interaction
Ratio of Maths to Art answers



The differences between the correct and incorrect scores were analyzed for each school by means of a t-test.

	Mean	S.D.	T	DF	PROBABILITY
<u>William Hardie</u>					
incorrect	5.9	1.8	-5.63	38	0.0
correct	10.1	2.8			
<u>Cadbury Hill</u>					
incorrect	6.95	1.63	-3.98	38	0.0
correct	9.05	1.7			
<u>Ashurst</u>					
incorrect	7.75	1.8	-1.11	38	0.274
correct	8.4	1.9			
<u>Treliske County</u>					
incorrect	7.85	0.48	-1.76	38	0.087
correct	8.15	0.58			

The null hypothesis being that there are likely to be as many correct as incorrect answers in any particular school.

The significance of the differences between correct and incorrect means at the 0.05 level of probability for Cadbury Hill and William Hardie and the lack of significance of difference in Ashurst and Treliske County confirms the trend noted above, the indication being that the codings of the practice of each school assigned in Chapter 4 were made with some degree of validity.

The Maths context provided greater opportunity for the children to discriminate between a Maths response and an Art response given the available set of responses. The experiment was clearly biased towards Maths responses. However, even within this constraint a cline of responses, both of the ratio of Maths to Art answers in Maths lessons

and differences between school correct and incorrect, were in very general accord with the cline of codings hypothesised in the school descriptions.

In very general terms, as values of classification and framing weaken in the hypothesised codings, as in Treliske County and Ashurst, so the tendency in this data is towards less distinction between lesson contexts in terms of responses given and fewer "correct" responses. Whereas where values of classification and framing were described in terms of generally stronger values, as in William Hardie and Cadbury Hill, then greater distinction was made between contexts and relatively more correct answers were given.

Discussion

The discussion of the validity of the results obtained in this study must be conducted in the light of the experimental methods employed. The tasks of appropriate lexical choice must be the focus of attention in an initial examination of the weakness of this study. Being artificial constructs, the tasks alter the nature of the phenomena being studied. However, as shown above, the words used in the tasks were obtained from a subject group whose lexical competencies were, almost certainly, within the range of subjects studied. The technical college group had recently attended a wide range of special schools and were involved in a range of activities within the college. It was thus unlikely that the tasks constructed would simply reflect the unitary realizations of the technical college organization. As the tasks were employed to perform a comparative function, the relevance of the detailed nature of the tasks may not be of such crucial importance.

Thus it is argued that within the context of a pilot study of such phenomena, the results of application of the tasks in question were considered to be indicators of worthwhile detailed study.

This experiment was designed to examine the effects of different school organizations on the selection of differently specialized lexical responses according to the pedagogic context of selection. In that it examined the selection of responses from an internal set rather than the production of responses by the child, it is not examining the phenomena within which the primary interest lies. If different forms of school organization differ in the way they encourage children to talk about their work, it is the language that is elicited in that situation that must be studied.

What may then be said of these results in terms of the intention of revealing the effects of form of organization of knowledge and systems of control on the way children select responses to demands of description of objects and hypothetical tasks?

The results indicate, with an acceptable level of significance, that the stronger the distinction made in terms of the timetable and instructional context and the greater the insulation between subject categories then the greater the differential response to the tasks.

In order to investigate the validity of the hypothetical codings of the schools in terms of values of classification and framing, a more delicate, valid and ultimately reliable method of enquiry is required. However, the overall trend in the data is suggestive of validity of coding of the schools though the coding itself was at a very general

level. The essential element of interest is the suggestion of a relation between school structure and individual communicative competence.

Conclusion

The design of this pilot study presents difficulties for unambiguous interpretation of the results. A major focus of criticism must be the essentially arbitrary basis on which lexical items were selected for categorization. The relationship between these categories and the principles of evaluation which actually apply in the classrooms may justifiably be considered tenuous. Even if unambiguous lexical items could have been derived, the act of asking the children to allocate objects to pre-ordained items in itself represents a serious distortion of the setting. This loss of ecological validity, Bronfenbrenner (1977), in the pilot study casts doubt on the validity of the measures obtained. In attempting to objectify the criteria of evaluation generated in these classrooms this pilot study has possibly changed the nature of the very contexts with which it was concerned.

However, these results were taken as encouraging and exciting indications of fruitful areas of study.

The Development of Research Methods for the Second Phase

Introduction

There was now a strong requirement for a change in experimental approach: one that would allow for the examination of children's unconstrained utterances in the contexts in which the children normally work.

Rather than constraining children to select single words from an externally categorized set, an approach was required which enabled the objective comparison of children's actual utterances whilst they are engaged in different instructional practices.

This demands a resolution of a long established tension in psychology between objective comparison under controlled conditions and ecologically valid research.

Thus a procedure was required to elicit utterances in the working classrooms in such a way as to enable these utterances to be judged as belonging to one discourse rather than another.

A first attempt was made to present children in the different contexts with the same tasks and to devise a method of comparing the responses to the tasks. If ecological validity is to be preserved these must be tasks that do not alter the nature of the situation. As attention in these studies is focussed on what counts as a legitimate text in a specific context, if the context is altered so may the definition of legitimacy.

The degree of specialization of utterance between contexts across schools is the focus of attention here. The pilot study limited this comparison to one of the degree of difference in selection of pre-classified single words. This comparison was statistically uncomplicated and yet of doubtful validity. The main study could simply collect all the utterances in the classrooms and thus construct an ecologically valid data base but with seemingly no immediate method of analysis or comparison.

Attempts to reduce the complexity of classroom life to an externally derived system of constructs inevitably project a model of that system on to perceptions of it, Stubbs, M. & Delamont (1976). Equally, if standardised psychometric procedures are abandoned, it is not possible to rely on the consistency with which observations are made, even given uniform conditions of administration, Kent & Foster (1977).

Concern here is therefore with developing a procedure which will at one time allow for elicitation of responses to stimuli in a natural setting (i.e. the working classroom) and also allow these responses to be compared with one another objectively. The procedure must then allow for consistent and accurate observations of elicited responses. As Kazdin demonstrates, accuracy and agreement are not the same, Kazdin (1977). Thus whilst we may develop a procedure which allows for inter-observer/evaluator agreement, we cannot assume that these are accurate observations/evaluations of the responses in question. However, the nature of the research in hand by very definition precludes the possibility of there being an external source of definitive measure. The phenomena under scrutiny being the products of social construction and transmission clearly preclude the notion of absolute measure.

Thus for the purposes required here, it may be assumed that if two or more observers consistently show relatively high agreement then these observations reflect the subject's performance relatively accurately Kazdin (1977).

As the teacher is a major source of the criteria of evaluation within the classroom and the method of inspection required classroom-based activity, itself a part of that classroom, teachers were used as observers of children's utterances.

The hypothesis operating here is that teacher-based evaluations provide a logical and coherent source of criteria by which classrooms may themselves be compared. Just as the judgements of the tests must themselves be valid and reliable, so must the tests be elicited in a manner which does not distort the nature of the classroom. Thus teachers could be presented with children's utterances and asked to categorize them on the basis of their supposed context of elicitation. These evaluations of the children's utterances by the teachers could then be compared with the actual contexts of elicitation. The degree of congruence of the evaluations with the actual contexts could then be compared across schools. However, if the rules governing the possible tasks are transcended then the context is redefined and in our case, becomes an artefact and not the phenomena which is our focus of concern.

The experiment requires a selection of tasks which are capable of eliciting appropriate recognition rules and at one and the same time they must be within the possibilities of normal classroom practice.

Given tasks which preserve the nature of the classroom, a procedure is then required which will use the tasks in such a way that they generate data that enables the comparison of schools across contexts.

The Development of Research Procedures

The studies outlined above have clear requirements in terms of

- (a) Research Procedures
- (b) Research Stimuli

(a) THE PROCEDURE

In order to attempt to validate the elicitation process, the following principles of procedure were adopted:-

First, the experimenter made regular visits to the classrooms concerned in order to familiarise the children with him and himself with the school, classrooms, staff and children.

Secondly, the stimuli used to elicit the children's responses were presented in the normal classroom whilst the normal lesson was in progress.

Thirdly, the tasks were constructed by means of a process which ensured that they were within the capacity and experience of the children.

Subjects

Six male children were selected at random from those children in the age range 11.0 to 11.5 years in each of two of the MLD schools. Cadbury Hill and Trelishke County were used for this purpose as they represent the poles of the range of classifications and framing at most levels across the schools.

The children were approached whilst they were working normally in each of two instructional contexts, that is both in what counted as an artistic context and what counted as a mathematical/scientific context within both schools. The children in these contexts were shown pictures and asked to talk about them whilst sitting at their work.

Care was taken to avoid interviewing a child who was working in the same group as another child in the sample. Any carry-over effect would have been a source of interference. As noted above, the experimenter spent a considerable amount of time in the classrooms concerned, acting as an assistant to the teacher in order that his presence and experimental activity would not distort and disrupt the experimental context.

The picture tasks used in this case were drawn from sources with which the children were familiar. Children's textbooks, magazines and posters were reviewed, and pictures selected on the basis of clarity and colour. The subjects of the pictures were clear and unambiguous, i.e. the pictures all displayed a clearly defined subject.

Students from a college of further education assisted in the choice of the tasks in that they were asked to select pictures that they would describe as having an obvious and clear subject.

The selection of tasks in this case was not the subject of undue rigour, as the main focus of attention was on inter-observer agreement on the responses, not the nature of the responses themselves.

A split half design was used in that half the children in each school were shown half the set of twelve tasks in one context and the other half in the other context. The other half of the group of children were shown the same tasks in the reverse order of context. Within each cell

the order in which tasks were presented was randomized.

For ease of administration, the children, tasks and schools were allocated numeral names:

Tasks		1 - 6	7 - 12
School 1	Child 1 - 3 4 - 6	Art Maths	Maths Art
School 2	7 - 9 10 - 12	Maths Art	Art Maths

Presentation of Tasks

The children were engaged in a conversation concerning the lesson they were in and the nature of the activities in which they were required to engage.

The following presentation was then used:-

"We are in a (Maths/Art) lesson. Your teacher is teaching you about (Maths/Art). What would your teacher like to hear you say about this picture in this lesson."

The children's responses were recorded using a small cassette player, and subsequently transcribed.

One teacher from each school and one from another MLD school were then asked to judge whether each response was artistic, scientific or neither. The results were then collated and compared.

Results

- The following coding system is used:-

A = graded artistic by teacher

S = graded scientific by teacher

N = graded as neither by teacher.

In the two schools the child response total gradings were as follows over all teachers:

<u>Context</u>	<u>Grading</u>			<u>School 1 (CH)</u>
	<u>A</u>	<u>S</u>	<u>N</u>	
Art	51	19	39	
Science	6	58	43	

<u>Context</u>	<u>Grading</u>			<u>School 2 (TC)</u>
	<u>A</u>	<u>S</u>	<u>N</u>	
Art	28	44	36	
Science	10	32	66	

The figures above represent a compilation of 3 teachers' evaluations.

The combinations of teacher observations were modified as detailed in

Footnote 1.

Footnote 1

The following combination of teacher scores is theoretically possible for any one response:-

	<u>A</u>	<u>S</u>	<u>N</u>
(A)	2	0	1
(B)	0	2	1
(C)	0	1	2
(D)	1	0	2
(E)	1	1	1
(F)	1	2	0
(G)	2	1	0

A modification of scores applied whereby

(E) remained at total disagreement;

(A) - (D) were accepted as a majority consensus, i.e.

A	S	N	becomes	A	S	N
2	0	1		3	0	0
0	2	1		0	3	0
0	1	1		0	0	3
1	0	2		0	0	3

Categories (F) and (G) did not occur.

The data when modified as above became:-

<u>Context</u>	<u>Grading Mod.</u>			<u>School 1 (CH)</u>
	<u>A</u>	<u>S</u>	<u>N</u>	
Art	53	21	33	
Science	5	59	44	
<u>Context</u>	<u>Grading Mod.</u>			<u>School 2 (TC)</u>
	<u>A</u>	<u>S</u>	<u>N</u>	
Art	29	42	37	
Science	13	31	64	

Inspection of the modified and non-modified data reveals only very minor changes.

The changes under modification were as follows:-

	<u>A</u>	<u>S</u>	<u>N</u>	<u>No.</u>
(A)	2	0	1	14
(B)	0	2	1	18
(C)	0	1	2	16
(D)	1	0	2	11

Thus, taken over all responses and gradings, the changes were as follows:-

	<u>A</u>	<u>S</u>	<u>N</u>
Totals	95	154	184
Changes	14	18	27
% changes	6.78	8.55	6.8

The size of the bias in the modification process suggested that 2:1 disagreement in grading reflects inflexibility in the system, rather than disagreement of observer.

Conclusion

It was considered acceptable to take an index of inter-observer agreement using the modified figures and in future to modify the grading system in order to allow for finer distinction. From 144 cells a percentage agreement of 95.138 was achieved. The grading system was modified to allow for finer distinctions.

The modification in the grading system introduced was

from	A	N	S as the set of categories		
to	A	NA	NN	NS	S as the set of categories
where in the reliability calculations					
Observer	1	2			
	A	NA	=	A	
	NA	NN	=	NN	
	NN	NS	=	NN	
	NS	S	=	S	

Applying modified data

Using the modified figures, the individual school responses yield the following patterns:

For School 1 (CH)

Total number of Artistic responses in Art = 53

Total number of Scientific responses in Science = 59

For School 2 (TC)

Total number of Artistic responses in Art = 29

Total number of Scientific responses in Science = 31

Total correct scores in context becomes:-

School 1 (CH) = 112

School 2 (TC) = 60

Thus whilst the teachers from Schools 1 and 2 have revealed through their evaluation of responses that they possess the same recognition rules, the children in the schools do not uniformly realise these rules.

The high level of agreement of teacher evaluation indicated, albeit despite an inadequate grading system, suggests that the teachers were operating their evaluations on the basis of a common set of understandings. They shared the recognition rules of the subjects (discourses), however, these "common understandings" were not transmitted as effectively in School 2 (TC) as in School 1 (CH). The implication being that it is not teacher capacity/understanding that conditions the variations in school responses, rather the responses are modulated by the schools themselves.

2. The Research Tasks (procedures for eliciting utterances)

There are two major criteria which need to be satisfied by the research tasks. Firstly they must be seen by the children as a normal part of their experience of classrooms. They must be legitimate within the classroom. Secondly the tasks may be capable of eliciting utterances from the children which on inspection and comparison reveal whether or not the children are using different forms of talk in different instructional contexts. That is, the tasks must be capable of revealing whether or not the children possess the realization rules of specific instructional practices, in this case those of Mathematics/Science and Art.

The procedure described below aimed to validate the construction of legitimate research tasks. Clearly this involved using a number of possible tasks with groups of children. It was argued that the validation procedure would be more powerful if the children concerned were in similar classroom situations to those who were to be the eventual subjects of the study.

The strategy used was to involve groups of 14 and 15 year old boys from Treliske County and Cadbury Hill in the first level of task selection. Both groups were familiar with the researcher.

The problem was that of a selection of pictures which had the potential to generate scientific and artistic utterances. A group discussion was initiated concerning the nature and scope of Science and Art. Pictures were introduced by the experimenter and the children discussed what would count as a Scientific or an Artistic description.

The following points emerged in the discussions with the children:-

- (1) The stimuli should have a single conceptual focus.
- (2) The pictures should be clear and simply portrayed.
- (3) The pictures should, if possible, be derived from a familiar source.

The classroom contained a range of text and reference books as well as a large number of Sunday Supplement magazines. The children were told that they could select pictures from any source within the classroom.

The stimuli collected in this way were subjected to a simple experimental procedure.

Children were selected in pairs from classes in an MLD school. The classes covered the age ranges

- (a) 11.0 ---> 13.0 years (male and female)
- (b) 16.0 ---> 17.0 years (female)

All the children in the experimental group were involved in discussions about what Science/Maths and Art lessons were like. Children were asked to take on one of two roles

- (a) "Quizmaster"
- (b) Competitor

Having opted to be "Quizmaster" the child was asked to choose either of the following roles:-

- (c) Artist in an Art lesson
- (d) Scientist in a Science or Maths lesson

The choice was recorded by the experimenter but the nature of the decision was kept from the "Competitor" of the pair. As the experiment progressed some children exchanged roles for the sake of balance. The "Quizmaster" was then asked to describe the stimulus in the chosen role. Children acting as "Competitor" were invited to evaluate the "Quizmaster's" utterance and allocate it to role (c) or (d).

Thus a "Quizmaster" would select a picture and adopt a role and then proceed to describe the picture in that role. The task of the "Competitor" was to discern, by listening closely to the "Quizmaster's" description of the picture, which role the "Quizmaster" had adopted.

The procedure was reversed across roles and repeated one week later.

Results

Fifteen tasks resulted from the processes involved in the initial selection.

Six pairs of children were used.

Tasks 1, 4, 5, 7, 8, 11, 12, 13, 14, 15 were correctly judged by the children in 3 cases of each context.

Tasks 2 and 3 were correctly judged in only 3 out of 6 cases.

Tasks 6 and 10 were correctly judged in 5 out of 6 cases.

Task 9 was judged correctly in only 1 case.

This phase of the experiment indicated that task nos. 2, 3, 6, 9 and 10 were not suitable in that they did not have the potential for the realisation of competence achieved by the remaining tasks.

The school used in the first part of the experiment was one of high values of classification and framing. In order to validate tasks it was felt necessary to repeat the procedure in a school with low values of classification and framing, the question of interest and concern being as to whether children in both schools would display similar patterns of performance indicating underlying competencies.

The results from School 2 (T.C.) using six pairs of children matched for chronological age with School 1 (C.H.):—

Tasks 1, 5, 7, 11, 12, 13, 14, 15 were judged correctly in all six cases.

Tasks 4 and 8 were failed on 1 attempt.

Tasks 6 and 9 were failed on 2 attempts.

Tasks 3 and 10 were failed on 3 attempts.

Task 2 was failed on 5 attempts.

Thus totals of failure across schools are given below:—

<u>Task</u>	<u>School 1 (CH)</u>	<u>School 2 (TC)</u>	<u>Total</u>
1	0	0	0
2	3	5	8
3	3	3	6
4	0	1	1
5	0	0	0
6	1	2	3
7	0	0	0
8	0	1	1
9	5	2	7
10	1	3	4

<u>Task</u>	<u>School 1 (CH)</u>	<u>School 2 (TC)</u>	<u>Total</u>
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0

Tasks 2, 3, 6, 9, 10 were rejected as being unsatisfactory for the requirements of the main study.

The results of School 2 (TC) were indicative of lower accuracy in either realising relevant text or recognising it or both. This result is in keeping with the general thesis. The classification values of Treliske County are lower, thus the transmission of rules concerned with what counts as a legitimate text in any one context will be of a different order. The children in Treliske County appear, even from this task validation procedure, to be slightly less competent at both recognising and producing the appropriate text in its relevant contexts. This is presumably because they are being socialized, by their experience of school, into an orientation to knowledge which is not grounded in clear-cut divisions and the explicit segregation of signs such as linguistic markers and labels. This conjecture will be further tested later in the study.

However, it is possible to argue that because the devices derived using this procedure were biased towards better performance on the part of children in one school (CH) the data generated by their more general usage would reflect this bias. However, the degree of difference between schools was very slight (1 failure out of a possible 12

failures on only 2 out of 10 tasks) and may also be attributable to a random effect.

This procedure produced ten pictures for use in the main study. Details of these are given in Appendix 5.

The tasks selected above were deemed to have the capacity to reveal the competences required in the main study.

Main Study

Introduction

The preliminary research activities had generated a modified research procedure and a set of experimental tasks which could elicit the required forms of utterance. It became clear in the course of the study that elements of the procedure were still unsatisfactory and part of the description that follows details the modifications that were applied.

As is clear from the description and analysis of the study schools, there is a trend within these schools towards changing the form of pedagogic practice as the children approach school leaving age. As a consequence a study was made comparing junior and senior pupils' powers of discrimination and realization across the four schools.

Throughout this study male children were used as subjects for two reasons. Firstly, the schools concerned are quite small (Group 7(s)), with twice as many boys as girls. Each age group within the school only presented a limited sample of children and it would not have been possible to find large enough groups of girls within one age group across the schools and age ranges of the study. Secondly, it was considered important that children of the same gender should be used throughout.

This point is illustrated in the studies conducted by Walden and Walkerdine (1985) where they focus on the position of girls with respect to the discourse of school mathematics.

Subjects

Ten male children were selected for the study in each of two age groups in each of the four study schools. The limits on the age ranges were as follows:-

1. Junior Age Children

Children born between June 1973 and June 1974.

2. Senior Age Children

Children born between September 1st 1968 and August 1st 1969.

Materials

The ten picture stimuli presented to the children were mounted on green card and sealed in transparent film. The cards measured 30cm x 21cm.

Procedure

Children were familiarized with the experiment and questioned about the pictures using the same terms as were used in the derivation of procedure experiment.

These sessions were always conducted in the working classroom.

Each child was shown each picture in each of the two study contexts.

1. In the context of what counted as artistic activity.
2. In the context of what counted as mathematical and scientific activity.

The experimental procedure was modified slightly in that children were introduced to talking about the tasks via discussion about similarities between *mathematics* and *science*.

The children's responses were recorded on a small remotely controlled cassette tape recorder. These responses were subsequently transcribed and typed.

To summarize:

Ten junior and ten senior male children in each of four schools were shown ten picture stimuli in each context.

Clearly the children could not be shown the same pictures in different contexts in rapid succession. A period of 12-14 weeks elapsed between the presentation of any one picture stimulus to any one child in any particular context.

A split half repeated measures design was chosen in order to enable clarity of analysis. Within each cell of this three factor table the tasks were presented in the following fashion.

The tasks were randomly divided into sets A & B and the children similarly into sets a and b.

In context of Art (for a specified school at a specified age):

children a will be given tasks A

children b will be given tasks B

In context of Science and Mathematics (for the same school at the same age):

children a will be given tasks B

children b will be given tasks A

Thus:-

Age		8		16	
Schools	Contexts	Maths	Art	Maths	Art
1	Time 1	bA	bB		
	Time 2	aB	aA		
2	Time 1				
	Time 2				
3	Time 1				
	Time 2				
4	Time 1				
	Time 2				

The first stage of the evaluation process involved the presentation of the data from the junior children to a teacher evaluator. Each child had talked about each of the ten pictures in two contexts.

As this stage was only a trial of the main evaluation process the categories of

Scientific/Mathematical

Artistic

Neither

were offered to the teacher evaluator as possible descriptions of the children's statements.

Results

School	Context	JUDGED AS		
		S	A	N
TC	Science	14	2	34
	Art	9	11	30
	TOTAL	23	13	64
WH	Science	21	3	26
	Art	11	28	11
	TOTAL	32	31	37
A	Science	24	4	22
	Art	13	10	27
	TOTAL	37	14	49
CH	Science	24	2	24
	Art	12	9	29
	TOTAL	36	11	53

One way analyses of variance were conducted for each judged variable in each context across schools.

In Artistic Contexts

Anova of data judged by teacher evaluator as being Scientific elicited in an Artistic context

Source	DF	SS	MS	F	PROB
Schools	3	0.875	.2917	.2658	.8496
Within Schools	36	39.5	1.0972		
TOTAL	39	40.375			

Anova of data judged by teacher evaluator as being Artistic elicited in an Artistic context

Source	DF	SS	MS	F	PROB
Schools	3	24.5	8.1667	5.5056	0.0032
Within Schools	36	53.4	1.4833		
TOTAL	39	77.9			.

As the probability of the F ratio was highly significant a Scheffe procedure was used to test for significant differences between individual schools. Scheffe's procedure was chosen as it is the most robust of the appropriate tests available.

The SPSSX Scheffe procedure yields pairs of significantly different schools at the chosen significance level (in this case 0.05).

There were significant differences between WH and all other schools. The schools divide into two homogenous subsets, those being

A.	School	CH	A	TC
	Mean	0.9	1.0	1.1
B.	School	WH		
	Mean	2.8		

Anova of data judged by teacher evaluator as being neither Artistic nor Scientific when elicited in an Artistic context

Source	DF	SS	MS	F	PROB
Between Schools	3	23.875	7.9583	4.783	0.0066
Within Schools	36	59.9	1.6639		
TOTAL	39	83.775			

The Scheffe (0.5) procedure on this highly significant F ratio yields significant difference in the means of WH and A and also between WH and TC.

The Homogenous Subsets of means are as follows:-

A.	School Mean	WH 1.1	A 2.7	
B.	School Mean	A 2.7	CH 2.9	TC 3.0

In Scientific Contexts

Anova of data judged by teacher evaluator as being Scientific when elicited in a Scientific context

Source	DF	SS	MS	F	PROB
Between Schools	3	6.675	2.225	2.2188	0.1027
Within Schools	36	36.10	1.0028		
TOTAL	39	42.775			

Anova of data judged by teacher evaluator as being neither Artistic or Scientific when elicited in a Scientific context

Source	DF	SS	MS	F	PROB
Between Schools	3	8.3	2.7667	2.8621	0.0502
Within Schools	36	34.8	0.9667		
TOTAL	39	43.1			

Given that the level of significance of this F ratio was close to a minimally acceptable level a Scheffe procedure was conducted but did not yield significant differences between any two means.

Anova of data judged by teacher evaluator as being Artistic when elicited in a Scientific context

Source	DF	SS	MS	F	PROB
Between Schools	3	0.275	0.0917	0.3402	0.7964
Within Schools	36	9.7	0.2694		
TOTAL	39	9.975			

Summary of Anova Results

Context	Response	Significant	Subsets
Art	Scientific	No	WH/CH A TC WH A/A CH TC
Art	Artistic	0.05	
Art	Neither	0.05	
Science	Scientific	No	None
Science	Artistic	No	
Science	Neither	0.05	

The data from each school was also analyzed using a χ^2 test of significance. For each school a table with three columns (categories of response) and two rows (lessons) the null hypothesis of no lesson effect was tested.

School	χ^2	Significance level
TC	7.61	5%
A	7.67	5%
CH	8.91	2%
WH	43.19	1%

χ^2 2 degrees of freedom

5% probability = 5.991

2% probability = 7.824

1% probability = 9.210

The different levels of significance of lesson effect for each school stand in approximately the same relation to one another as do the values of classification and framing regulating the subject (horizontal) dimension within the schools. That is, there is a trend towards greater significance of lesson effect with increasing strength of classification and framing.

Discussion

The degree of association of judged answer with eliciting context appears to increase in accordance with expectation. That is, the higher the value of classification (C+) of the school the greater the confidence with which the null hypothesis of no lesson effect may be rejected.

However, some more problematic issues arise when the Anova results are considered. Firstly, on the basis of the teachers' judgements there is a relatively low degree of separation of schools. Secondly, although a school with high values of classification (WH) was seen to be better at eliciting artistic statements, the scientific statements appear to yield insufficient information to serve as a basis for judgement.

Prompted by comments made by the teacher evaluators to the effect that it ~~was difficult to judge many of the statements~~ because of the absence of any "criteria by which to categorize such language", it was decided to invoke a change in procedure. The modified procedure was not used on the whole data set.

Arguably much information was lost in the procedure outlined above because of the difficulty in categorizing statements. The category "neither" may indeed have become a compound of statements which were difficult to ascribe to a category. It was felt that this problem would also arise in the categorization of NA, N and NS in the modified procedure.

It is clear that the judges could not be provided with clear guidelines as to what is Scientific or Artistic Language. These criteria are generated in the specialized pedagogic practices which are the focus of the study. They are by definition tacit socially derived rules.

In the absence of absolute measures it was decided that a procedure which involved the relative judgement of statements would be more appropriate.

MAIN STUDY PART II

The Modified Procedure

Introduction

Whilst the first part of the main study did involve teachers as evaluators, the mode of evaluation proved to be inappropriate and not entirely helpful. By inviting the teacher to categorize the utterances into absolute categories, the procedure was demanding an explicit articulation of what are almost inevitably tacit criteria. The categories of school knowledge, however they are constituted, rarely carry with them explicit overt rules that legitimize certain forms of communication and invalidate others.

In a sense asking teachers to categorize the children's utterances is demanding an explicit and direct realization of rules which are tacitly acquired. Hence the sense of frustration expressed by the teacher in the first part of the main study in attempting to articulate what counted as a scientific text. When the experimenter asks the child to produce a statement that he thinks his teacher would consider to be legitimate, the demand is for a school/classroom based notion of legitimacy. Given that absolute categorization is rendered problematic by the obscurity of the criteria of evaluation, there is here another level of compounding of the problem.

When school based texts are presented for absolute evaluation, how does the experimenter allow for a degree of disjunction of the sets of criteria of evaluation that may operate in the classroom from outside the classroom? Does what counts as scientific or artistic in the

classrooms (Note 1) retain its definition when judged externally?

Artistic discourse within a school may or may not relate to a child's perception of valid artistic discourse outside the school.

Clearly then the exact nature of the criteria of evaluation for each classroom cannot be explicitly articulated. By asking the teacher to categorize statements one by one, attention is focussed on some absolute notion of these criteria. The nature of the teacher's task has diverted the attention away from the boundaries between the interactional practices in which the texts were generated and onto the isolated texts. Attention is not explicitly directed to the degree of difference between the realizations of forms of practice within the school but onto what must be external criteria of evaluation if in fact they can be directly addressed.

By asking the teacher to categorize single texts the research was demanding that they make explicit criteria that had been tacitly acquired during their own socialization into knowledge and the practice of teaching. The question remains as to whether these criteria are those that obtain in the special school classrooms where the children were educated. Tomlinson's (1981) study revealed the extent to which special school practice can diverge from mainstream school practice. The possibility that what counts for the teacher as Science/Art in the context of the demands of this task of text classification is not what counts as Science/Art in the classroom must then be allowed. That this was in fact the case is indicated by the expressions of difficulty made

Note 1. This is not to imply that scientific/artistic means the same thing in all schools/classrooms.

by teachers when attempting to categorize the texts. It may also be that, in the pilot study, the high degree of interobserver agreement was the realization of the relatively similar experience of the teacher in the past. That is, that all the teachers may have experienced similar patterns of socialization into knowledge and yet may be encouraged to suspend this orientation when operating professionally in a school. This issue will be explored later in the study.

Clearly the procedure requires modification. Rather than evaluating the children's texts with respect to externally derived criteria, a procedure is required which examines these texts in terms of their validity in the classroom.

An examination of the realization in a text of the boundaries between school subjects can only be validated through comparison between texts produced within that social setting (school/classroom). In this way the criteria used to distinguish and categorize texts will be those which operated in the social situation in which they were produced.

The judgement of single texts as being Scientific, Artistic or Neither (or as was proposed on a more elaborate scale) was therefore abandoned as being invalid by virtue of the fact that the criteria of evaluation did not necessarily relate to social site of text production.

The Modified Procedure

The statements were elicited from the children using the procedure outlined in Part I of the Main Study.

This procedure yielded ten pairs of statements for each child, one of each pair of statements being elicited in a Scientific/Mathematical context and one in an Artistic context. A pair of statements exists for each stimulus picture.

After these sets of ten pairs of statements had been transcribed and checked they were typed and, using a cut and paste procedure, paired and grouped together.

For each of ten children in two age groups in four schools a set of ten paired statements was produced.

The format of the sets of paired statements was such that there were no signifiers of eliciting context of each of the constituents of the statement pairs.

Care was taken during the cut and paste procedure to ensure that the relative order of the Artistic context elicited and Scientific/Mathematical context elicited statements was at random across the ten pairs. This randomizing procedure was unique to each set of ten pairs of statements.

This procedure produced sets of data for presentation to teacher evaluators. They were shown ten pairs of statements for each child. Each statement pair was produced by a child in response to one picture task.

The teachers were presented with the statements and the pictures which were used to elicit the statements/utterances. The task was now one of comparing the two statements rather than judging a statement in isolation. This task clearly relates more closely to the aim of understanding the process of transmission of the classificatory principle than "objective" categorization.

Two teacher evaluators agreed to the task of reviewing eight hundred statement pairs. These teachers were drawn from Treliske County and Cadbury Hill.

Clearly this task had to be staged over a period of time. A limit of two hours per evaluation session was set and the entire task was completed within two months. Given that these teachers were to be presented with a large number of similar tasks over a period of time, there existed the possibility that their performance on the task would improve with time. The order of presentation was therefore randomized across children, ages and schools for each teacher observer/judge.

For each statement pair each evaluator was asked:-

1. Can you tell the difference between these two statements?
2. If you can which one do you think was made in which context?
3. Can you give any reason why you allocated this statement to a particular category?

This procedure yields data of the following form:-

- A. Statements are classified as being
 - 1. Neither - they were indistinguishable
 - 2. Noted - the evaluator considered that they were distinguishable
 - 3. Correct - The evaluator assigned the statements to the category of context in which they were elicited

- B. A list of words or statements which the evaluator considered significant in the categorization process.

The data on correctly detected subject appropriate statements across observers and schools for individual children was displayed graphically in order to give the reader a visual impression of the scale of the data.

Results

The total number of utterance pairs judged as being distinguishable and then correctly categorized for each age group across the four schools are presented graphically in figures 4 and 5. These displays show the data for both observers. Before proceeding with the details of the major analysis the issue of inter-observer reliability will be discussed.

Inter-observer Reliability

Clearly with an experimental situation as complicated as the one in hand no single measure of reliability is entirely adequate or satisfactory.

The possible combinations of observer judgements are as follows:-

	Observer 1	Observer 2
1	Neither	Neither
2	Neither	Correct
3	Neither	False
4	Correct	Correct
5	Correct	Neither
6	Correct	False
7	False	False
8	False	Correct
9	False	Neither

Total agreement may be said to exist in Categories 1, 4 and 7. A "hard" measure of percentage agreement may be gained from examining the totals of Categories 1, 4 and 7 for each school and age group.

Junior	% agreement 1,4,7
TC	91
A	80
WH	82
CH	81
Senior	
TC	85
A	97
WH	81
CH	87

In that this measure considers Categories 2, 3, 5 and 9 to be disagreements, it is arguably over-harsh. If then the disagreements are only taken to be the two categories where each observer indicates that they can distinguish between the statements but disagree about the designation of them (6 and 8), an arguably realistic, if "soft", measure may be obtained.

% agreement (1,2,3,4,5,7,9)

Junior

TC	99
A	92
WH	95
CH	96

% agreement (1,2,3,4,5,7,9)

Senior

TC	98
A	98
WH	100
CH	97

Both these measures imply that there is a high and acceptable level of inter-observer agreement.

A three way analysis of variance of the first level of the data was then conducted, the dependent variable being the number of statement pairs noted as being distinguishable from each other. The independent variables in a three way analysis of variance were School, Age of Children and Teacher Observer.

Summary of results of a three way anova for noted distinctions between statements made in two lesson contexts in four experimental schools with two age groups and two observers:-

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
Main Effects	111.825	5	22.365	7.326	0.000
School	110.025	3	36.675	12.014	0.000
Age	0.900	1	0.900	0.295	0.588
Obs	0.900	1	0.900	0.295	0.588
2-Way Interactions	43.825	7	6.261	2.051	0.053
School x Age	34.750	3	11.583	3.794	0.012
School x Obs	4.850	3	1.617	0.530	0.663
Age x Obs	4.225	1	4.225	1.384	0.241
3-Way Interactions	25.525	3	8.508	2.787	0.043
School x Age x Obs	25.525	3	8.508	2.787	0.043
Explained	181.175	15	12.078	3.957	0.000
Residual	439.600	144	3.053		
TOTAL	620.775	159	3.904		

Observer is treated as a factor in this analysis rather than a repeated measure as the observer factor constitutes a replication, Goldstein (1986) personal communication.

The three way interaction of school, age and observer, significant at the 5% level, was then investigated at each level of age and observer through one way analysis of variance with school as the independent variable.

Summary of one way analysis of Variance of "Noted" across schools

Observer	Age	Source	DF	SS	MS	F Ratio	F Prob
1	Junior	Between	3	18.275	6.091	3.5088	0.0249
		Within	36	62.50	1.7361		
1	Senior	Between	3	45.0	15.0	3.5387	0.0241
		Within	36	152.6	4.23		
2	Junior	Between	3	35.4	11.8	4.816	0.0064
		Within	36	88.2	2.45		
2	Senior	Between	3	76.47	25.49	6.732	0.0010
		Within	36	136.3	3.78		

The one way analysis of variance for noted across schools was significant at the 5% level for Observer 1 and at the 1% level for Observer 2, the implication being that, within the limits of interobserver reliability calculated above, Observer 2 was more confident in "noting" or declaring a difference between statements than was Observer 1.

These significant school effects were investigated by means of Scheffe's procedure for significant differences (at the 5% level) between school means.

School mean scores for Noted

School	JUNIOR		SENIOR	
	Observer 1	Observer 2	Observer 1	Observer 2
TC	5.4	4.3	4.3	5.9
A	5.8	6.2	4.9	3.9
WH	7.2	6.4	6.2	7.0
CH	5.9	6.7	7.0	7.5

Significant differences of school means

Junior Age

Observer 1 TC ----- WH
Observer 2 TC ----- WH and CH

Senior Age

Observer 1 TC ----- WH
Observer 2 A ----- WH and CH

These differences, and the difference between these differences, are those which underly the significant school by age interaction and seem to attest to an inconsistency in noting differences between statements across school ages by observer. It was considered that these inconsistencies should be reduced when the data on those statement pairs correctly distinguished in terms of lesson origin were analyzed. The hypothesis being that differences in noting discriminations arose from uncertainty and/or degree of confidence in discriminating. Those statement pairs not confidently noted as being distinguishable would be more difficult to correctly assign to the relevant lessons. Those

statement pairs which were confidently noted as being different would be more likely to be correctly assigned. Subject specific markers would have enabled clear distinction and easier categorization. Subtle distinctions would have been more difficult to agree on and more open to misclassification.

The analysis then moved to consider the data on those statement pairs noted and correctly judged as being from the two lesson contexts. The data is displayed graphically in Figure 4 for Junior children and in Figure 5 for Senior children. (The term "switch" in the title refers to the ability to produce a statement pair which may be judged as having been elicited in different instructional contexts.)

Figure 4

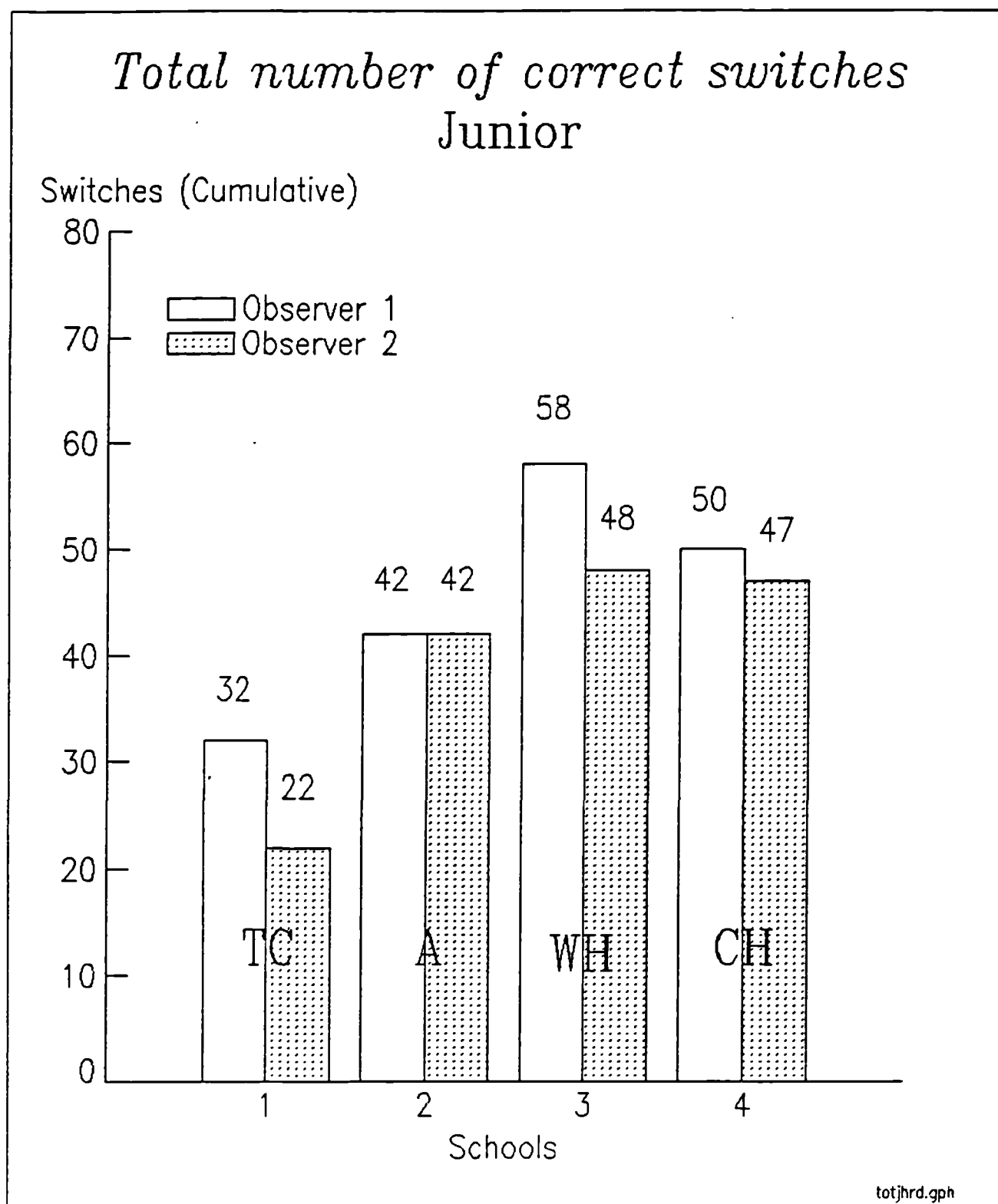
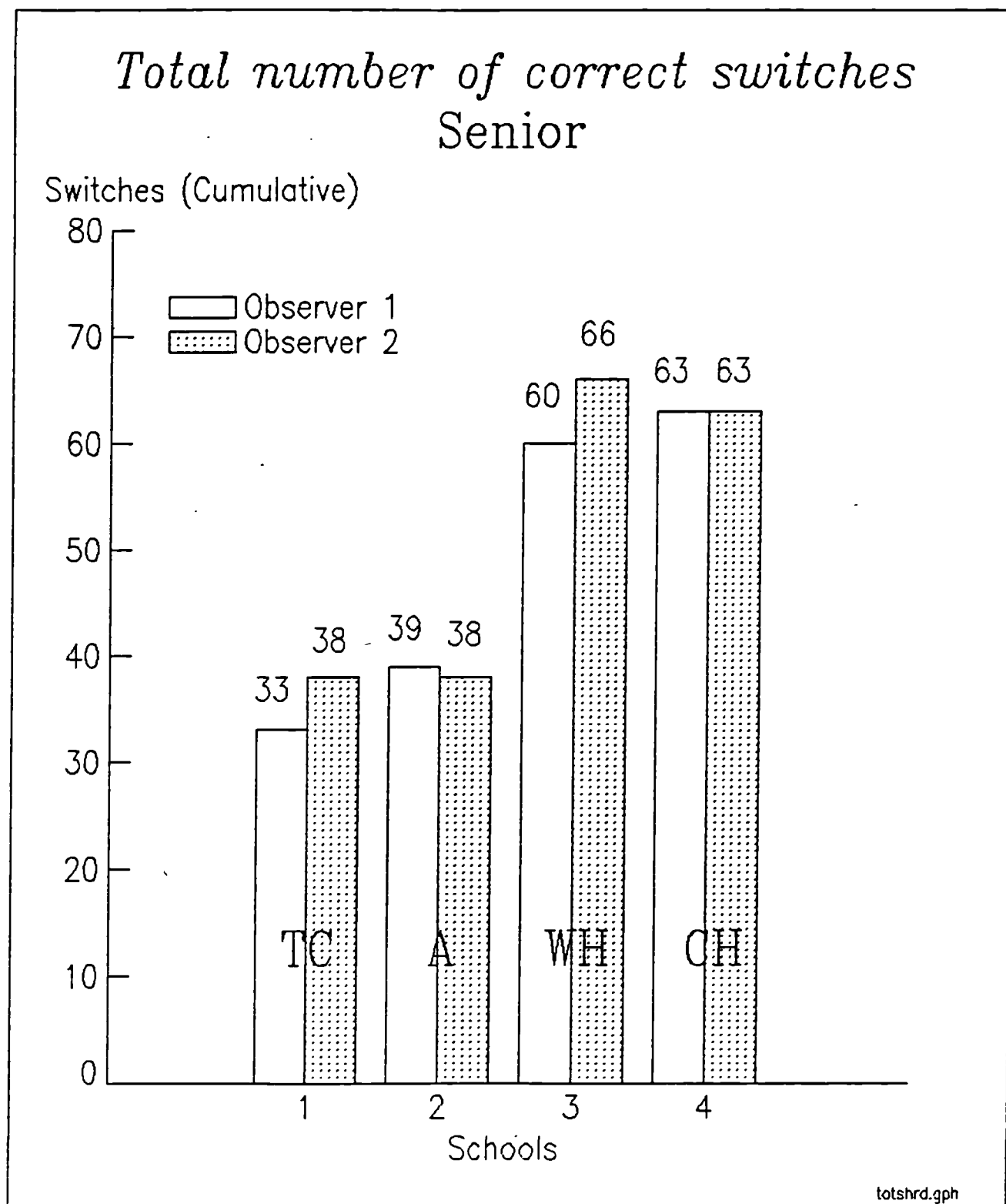


Figure 5



Results of a three way anova for correctly judged distinctions between
Eliciting contexts in four experimental schools with two age groups and
two observers

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
Main Effects	218.531	5	43.706	16.36853	0.000
School	195.719	3	65.240	24.43303	0.000
Age	21.756	1	21.756	8.147984	0.005
Obs	1.056	1	1.056	0.3955787	N.S.
2-Way Interactions	24.744	7	3.535	1.323834	0.243
School x Age	17.719	3	5.906	2.211964	0.089
School x Obs	0.219	3	0.073	0.2730819E-01	0.994
Age x Obs	6.806	1	6.806	2.549025	N.S.
3-Way Interactions	5.469	3	1.823	0.6827048	0.564
School x Age x Obs	5.469	3	1.823	0.6827048	0.564
Explained	248.744	15	16.583	6.210507	0.000
Residual	384.500	144	2.670		
TOTAL	633.244	159	3.983		

Inspection of this results table reveals highly significant main effects for school and age of children, with no significant interaction.

In order to investigate the school effects in greater detail one-way analyses of variance were conducted for each age and observer with an appropriate multiple comparison procedure between schools. As the number of scores within each group is the same and given this condition the F-test is robust to violations of homogeneity of variance assumptions, these assumptions are not tested. Huck et al (1974) p.66.

One way analyses of variance with correctly judged switches as the dependent variable and school as the independent variable were conducted for both junior and senior aged children.

Junior Children

Source	DF	SS	MS	F	F PROB
Between Schools	3	77.33	25.77	15.78	0.000
Within Schools	76	124.15	1.633		
TOTAL	79	201.487			

Senior Children

Source	DF	SS	MS	F	F PROB
Between Schools	3	133.23	44.412	12.606	0.000
Within Schools	76	267.75	3.523		
TOTAL	79	400.98			

Scheffe's multiple comparison range of school means tests were then carried out on each of these highly significant school effects.

Junior Children

Multiple range test using Scheffe's procedure (*denotes pairs of school means significantly different at the 0.050 level)

	School	TC	A	CH	WH
School	Mean	2.7	4.2	4.85	5.3
TC	2.7				
A	4.2	*			
CH	4.85	*			
WH	5.3	*			

The following subsets of schools, whose highest and lowest means do not differ by more than the shortest significant range for a subset of that size, emerge from the analysis.

Subset 1

TC (2.7)

Subset 2

A (4.2) CH (4.85) WH (5.3)

Senior Children

Multiple range test using Scheffe's procedure (*denotes pairs of school means significantly different at 0.050 level)

	School	TC	A	WH	CH
School	Mean				
TC	3.6				
A	3.85				
WH	6.3	*	*		
CH	6.3	*	*		

The following subsets of schools, whose highest and lowest means do not differ by more than the shortest significant range for a subset of that size, emerge from the analysis.

Subset 1

TC (3.6) A (3.85)

Subset 2

WH (6.3) CH (6.3)

The data was also examined for differences between the age groups in all four of the schools using a t-test.

t-tests of comparisons of data on correctly judged discriminations
between age groups within schools for both observers

School	Age of Children	Mean	S.D.	T Value	Sig
TC	Junior	2.7	1.261	- 1.65	0.108
	Senior	3.55	1.932		
A	Junior	4.2	1.24	+ 0.72	0.476
	Senior	3.85	1.78		
WH	Junior	5.3	1.55	- 1.60	0.118
	Senior	6.3	2.31		
CH	Junior	4.85	0.98	- 3.67	0.001
	Senior	6.3	1.45		

There is a significant increase in the number of correctly assigned utterances elicited by the pictures in CH alone. There is no significant difference in TC, A or WH. The interaction school x age is nearly significant (0.089) in the three way anova and the t-test findings accord with this indication.

The analysis conducted up until this point revealed specific trends in the data. First there was significant school effect at both junior and senior age. Secondly, differences between schools at the junior age level revealed a trend towards more correct judgement of discrimination with increasing strength of classification and framing regulating instructional practice in the classroom and the organization of subjects and teachers, TC being significantly different from WH, CH and A in terms of correctly judged discriminations of pupils' statements by teacher observers. Thirdly, whilst values of classification and framing tend to weaken with increase of age of pupils, the number of correctly judged discriminations tends to increase, significantly so in the case of CH.

However, the use of the dependent variable of correctly judged by observer with observer as an independent variable when the measure on each child is the sum across tasks was considered to be potentially invalid. When this variable was considered in the light of the reliability measures applied above a new dependent variable was developed.

The sum across tasks for each child of correctly judged discriminations made by each observer may be comprised of three arrangements.

For any particular task:

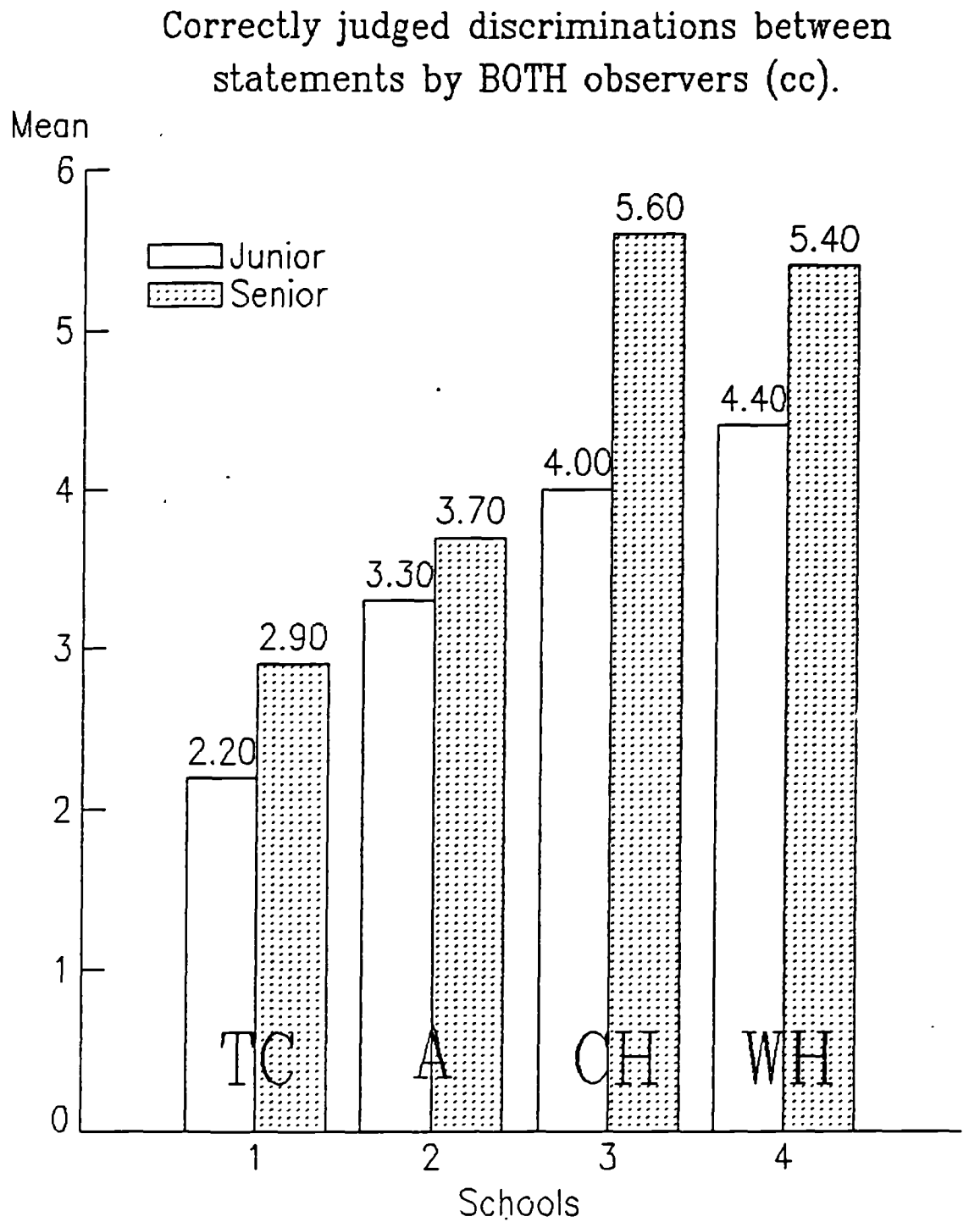
	Observer 1	Observer 2
Judged A	correct	correct
Judged B	incorrect (or vice versa)	correct
Judged C	correct (or vice versa)	noted

When the totals for all tasks for each child is calculated for each observer they may be composed of different combinations of A,B and C above. Just as in the reliability measures it was decided that a more robust measure for use as a dependent variable was that of agreement on each task for both observers (category A above). The use of this measure also removed the possible distortions of correct judgements only being drawn from within the limited "noted" subset of the data (those Noted). As the observers then judged the paired statements independently, the use of the dependent variable of correctly judged by both is one which is based on the entire sample of ten tasks. See Figure 6. When the dependent variable of correctly judged summed over tasks for each observer was used, the sample was limited to those that were noted by each observer.

Summary of two analyses of variance with correctly judged by both observers as dependent variable and school and age as independent variables

Source	Sum of Squares	DF	MS	F	Significance of F
Main effects	92.850	4	23.213	8.361	0.00
School	75.737	3	25.246	9.093	0.00
Age	17.113	1	17.113	6.164	0.015
School x age	3.938	3	1.313	0.473	0.702
Explained	96.788	7	13.827	4.980	0.00
Residual	199.9	72	2.776		
TOTAL	296.688	79	3.756		

Figure 6



meanhrd.gph

The main effect of school was investigated at each level of age by means of one way analyses of variance with follow up Scheffe tests on school means.

Junior Age

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob
Between schools	3	27.875	9.291	6.9543	0.008
Within schools	36	48.1	1.336		
TOTAL	39	75.97			

Scheffe test at 0.05 level of differences between school means

Junior

School	Mean	TC	A	CH	WH
TC	2.2				
A	3.3				
CH	4.0	*			
WH	4.4	*			

*denotes pairs of school means significantly different at the 0.05 level

The trend in the data for the dependent variable "correctly judged by both" was in approximate accord with the trend in the data for the dependent variable "correctly judged discrimination" as analyzed above.

The following subsets of schools emerge from the data and are presented with the subsets from the analysis of dependent variable "correct" using observer as an independent variable, where C denotes

"correct" and CC denotes "both observers correct" as dependent variables. See Note 1.

Junior

Subset 1

School	TC (CC)	A (CC)
Mean	2.2	3.3

School	TC (C)
Mean	2.7

Subset 2

School	A (CC)	CH (CC)	WH (CC)
Mean	3.3	4.0	4.4

School	A (C)	CH (C)	WH (C)
Mean	4.2	4.85	5.3

Thus for junior children the difference between the means of TC and A loses its significance when both correct is taken as the dependent variable.

Summary of one way analysis of variance and follow up Scheffe test with both observers correct as the dependent variable and school as independent variable

Senior Children

Source	DF	SS	MS	F RATIO	F PROB
Between Schools	3	51.8	17.266	4.09	0.0134
Within Schools	36	151.8	4.216		
TOTAL	39	203.6			

Note 1 These subjects are those whose highest and lowest means do not differ by more than the shortest significant range (0.05 Scheffe) for a subset of that size.

Scheffe test at 0.05 level of difference between school means

Senior Age

School	Mean	TC	A	WH	CH
TC	2.9				
A	3.7				
WH	5.4				
CH	5.6	*			

* denotes pair of school means significantly different at 0.05 level

The following subsets of schools are presented with the subsets from the previous analysis as with the junior children.

Subset 1

School Mean	TC (CC) 2.9	A (CC) 3.7	WH (CC) 5.4
School Mean	TC (C) 3.6	A (C) 3.85	

Subset 2

School Mean	A (CC) 3.7	WH (CC) 5.4	CH (CC) 5.6
School Mean	WH (C) 6.3	CH (C) 6.3	

Thus whilst the significance of the school effect falls with age (junior 0.008, senior 0.0134) the trend in the data on both dependent variables is in broad agreement, the only differences being those of loss of significance of the differences of means of the following pairs

(a) TC WH (b) A WH (c) A CH.

The significant age effect ($p = 0.015$) was also investigated for each school using t-tests between the means for each age group.

t-tests of comparisons of data where both observers have correctly judged discriminations between means for age groups within schools

School	Age of children	Mean	T value	Sig
TC	Junior	2.2	- 0.90	0.386
	Senior	2.9		
A	Junior	3.3	- 0.58	0.56
	Senior	3.7		
WH	Junior	4.4	- 1.08	0.295
	Senior	5.4		
CH	Junior	4.0	- 2.95	0.012
	Senior	5.6		

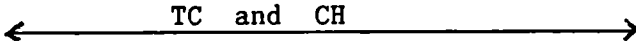
Just as in the case of the raw correctly judged data, there is a significant increase with age in the number of correctly assigned utterances in CH alone.

Discussion

The relative levels of independently judged ability to mark text, in this case speech, as belonging to a specific subject/discourse, in this case Mathematics or Art, are in accord with relative values of classification and framing assigned in the school descriptions.

When the most conservative analysis is considered with respect to these values of classification and framing for subjects at the school level and instructional practice within the classroom, the following patterns emerge:-

Junior	TC	A	CH	WH
School Subjects	-- -- C F	- - C F	+ ++ C F	++ + C F
Classroom Instructional Practice	-- -- C F	- - C F	++ ++ C F	++ ++ C F
Correctly judged agreed by both observers (MEAN)	2.2	3.3	4.0	4.4
(0.05) significant differences	<div> <div> <div>TC</div> <div>CH</div> </div> <div> <div>TC</div> <div>WH</div> </div> </div>			

Senior	TC	A	WH	CH
School Subjects	-- -- C F	-- + C F	- + C F	- + C F
Classroom Instructional Practice	-- -- C F	- -- C F	+ - C F	+ - C F
Correctly judged agreed by both observers (MEAN)	2.9	3.7	5.4	5.6
(0.05) significant differences				

The position of schools relative to one another with respect to children's ability to produce distinguishable text reflects the relative positions with respect to classification and framing. However, despite the fall in values of classification and framing for CH, A and WH, with age the number of distinguishable statement pairs rises, significantly so in the case of CH.

The implication here is that once children have acquired the ability to realize the subject-specific criteria in speech they do not necessarily lose it when the recognition rules weaken. That is, once they have acquired the realization rules of specific discourses, they have acquired the ability to speak mathematically/artistically and they can call on this competence even in situations where the boundaries between subjects have been weakened.

The leavers' classes where this weakening of the degree of insulation between categories occurs are designed for the last two years of schooling. The children in CH, WH and A have continued to be taught in situations where stronger boundaries obtained for most of their senior schooling, changing only for the final years. In CH where very strong framing (F++) obtains throughout the junior and most of the senior sections, the children appear to significantly improve in their ability to produce specialized statements. By the criterion of Scheffe's test at the 0.05 level of probability CH becomes the only significantly different school from TC.

In Bernstein's (1981) terms the voice of the discourses (subjects) is most clearly bounded in WH at Junior age. In both CH and WH the strength of boundary between voices of subjects falls with age to a point where they are considered to be the same at Senior level. However, the strength of the principles of control (framing) in CH was greater than in WH and remained stronger until the two years of leavers class.

The recognition rules in WH were generated on the basis of strongly insulated boundaries between subjects and the children were seen, through this experiment, to acquire the realization rules of these subjects to a greater extent than those in CH where the recognition rules were generated on the basis of weaker insulations between subjects.

Children in WH and CH acquire the realizations eventually. This process of rule acquisition is clearly related to some combination of strength of classification (recognition rules) and framing (realization rules).

The exact nature of this process and of the interaction of these variables is not clearly revealed by this experiment.

Clearly the issue of speed of acquisition of a competence, particularly when that competence is of use of language in school, is of great importance for the child with learning difficulties and this issue deserves further investigation.

The discussion of these results first requires that a set of potentially confounding variables be considered.

The factors considered initially were:

1. Measured Intelligent Quotient
2. Social Class with reference to Registrar General's Scale
3. Expressive Language ability.

The Distribution of Measured Intelligence Quotient across Schools

The schools supplied the most recent W.I.S.C. (R) full scores available for individual children in the sample. The most dated of these was taken in September 1983. The analysis was conducted in January 1986.

For the junior children the data provided was summarized as follows:-

School	Mean	Standard Deviation
TC	70.9	7.04
A	70.2	3.93
WH	67.0	8.43
CH	69.2	7.61

When the data was analyzed using a one-way analysis of variance the following table resulted:-

Source	D.F.	S.S.	M.S.	F	F PROB
Between Schools	3	86.67	28.89	.595	0.6224
Within Schools	36	1748.1	48.5		
TOTAL	39	1834.77			

There was no significant difference between schools in the measured I.Q. of the sample junior children. So many of the available I.Q. scores for the senior children were out of date (i.e. in excess of five years old) that the analysis would have been irrelevant to the present research.

The distribution of social class of sample children across schools

The Headteacher of each school agreed to provide the details of the occupation of the primary caretaker of each sample child. This data was then classified using the Registrar General's Scale. The details are as below:-

Junior children

School	R.G. GROUP		
	I + II	III (non manual)	III, IV (manual)
TC	1	2	7
A	0	3	7
WH	1	4	5
CH	1	3	6

Senior children

School	R.G. GROUP		
	I + II	III (non manual)	III, IV (manual)
TC	0	3	7
A	1	4	5
WH	1	3	6
CH	2	3	5

This data was then analyzed by means of a χ^2 test, each 3 x 4 table having 6 degrees of freedom.

Junior Age

For the data given $\chi^2 = 6.25$ with 6 degrees of freedom. This is not sufficient to reject the null hypothesis that the proportion of children in each social class is the same for each school.

$$\chi^2_{(6)} = 12.59, p < 0.05$$

Senior Age

For the data given $\chi^2 = 3.6$ with 6 degrees of freedom. Again this is not sufficient to reject the null hypothesis.

$$\chi^2_{(6)} = 12.59, p < 0.05$$

The implication at both ages is that there was no significant difference in social class distribution of children across schools.

When the data from the main study is considered in the light of this information the implication is confirmed. The data for number of correctly judged utterances was analyzed across social class groups. The social class groups were reduced to two: (a) Groups I,II and III non manual and (b) Groups III manual and IV.

A t-test was then performed across these two groups for all the study children.

Social Class	Number of cases	Mean	T value	D.F.	Prob
I, II and III non manual	50	4.24	-0.16	78	0.872
III and IV manual	30	4.3			

There were no significant differences across the sample for the criterion of number correctly judged distinctions between instructional contexts on the basis of social class.

Expressive Language Ability

Having established that it was unlikely that differences in ability to distinguish instructional contexts was due to either measured I.Q. or social class there remained one particularly elusive factor that required consideration. Expressive Language ability is often referred to in psychological texts but the exact nature of its definition remains a matter for debate. Even having agreed on a definition, the practice of testing such an ability must be described as problematic.

However, even given the fundamental doubts that exist about the validity of measuring expressive language ability, especially with children over the age of six or seven, it was decided that some attempt should be made to investigate this factor.

Advice was taken as to the most valid and reliable measures and the conclusion drawn that the following three measures represented a broad and sufficient base on which to found judgements concerning the relative

language abilities of the sample groups. Ivimey G (1986) personal communication.

The three indicators chosen were:-

1. The verbal scores from the W.I.S.C.(R) I.Q. test.
2. The expressive ability subtest from the I.T.P.A. battery of tests.
3. The North Western Syntax Screening Test.

The administration of these tests is extremely time-consuming and the sample of children tested was consequently restricted to the juniors in TC and CH. The descriptions of these schools, at the levels of both classification and framing, are very different. Where CH is described in terms of strong values of classification and strong values of framing, TC is described in terms of weak values of classification and weak values of framing. The main study has generated data that strongly suggest that some of these differences are realized in pupil talk. In CH the children produced significantly more ($p = 0.05$) statement pairs that could be discriminated by teachers than children in TC. They were judged as being able to express themselves using speech from which their teachers could deduce the context of utterance. Whereas the teachers found this to be a much more difficult task when presented with transcripts of the children's speech in TC. Concern here is with the question as to whether this difference in speech performance can be attributed to some general expressive language ability or to some competence acquired to a greater extent in one school (CH) than another (TC). It was presumed that examining these two schools offered the greatest potential for revealing any underlying bias in the expressive language ability of the children. A summary of the raw data is followed by results of respective t-tests.

1. Verbal score on W.I.S.C.(R)

School	Mean	Standard Deviation
TC	70.9	7.04
CH	69.2	7.61

2. I.T.P.A. verbal expression sub-test

School	Mean	Standard Deviation
TC	13.5	2.75
CH	13.8	2.25

3. N.S.S.T.

School	Mean	Standard Deviation
TC	26.1	3.66
CH	24.0	3.37

T-Tests

VARIABLE	T-value	DF	PROB (2 tail)
Verbal I.Q.	0.52	18	0.611
ITPA	-0.27	18	0.793
NSST	1.34	18	0.197

There is no reason to suppose on the basis of these tests that the differences revealed in correctly judged linguistic marking of utterances dependent on instructional context is due to some underlying expressive language ability.

Conclusion

From the examination of the three major factors of W.I.S.C. measured I.Q., social class and expressive language ability, it would seem that school differences revealed in the main study are not attributable to individual differences.

With these "within" school population factors eliminated from consideration as potential confounding sources, the school effects revealed in the main study analysis may be accepted with greater confidence. The evidence presented above strongly suggests a direct relation between the structural principles regulating relations of power and control within schools and the realization of specific criteria of competence on the part of pupils as judged by their teachers. A full and detailed analysis of the implications of this experimental finding is the intention of the concluding chapter.

The number of words uttered in response to picture description tasks

Introduction

During the course of the main study it was noted that not all the children uttered the same approximate number of words when responding to the experimental tasks.

Given that one school encourages children to work together in groups, co-operatively solving problems related to an ongoing theme, it would be reasonable to presume that pupils in this school (TC) would talk the most. Whereas in another school (CH) the children spend a considerable proportion of their time working on individualized programmes of study. It might be considered reasonable to presume that children in CH would not use as many words as those in TC. However, even a cursory examination of the raw data led to the conclusion that this was not the case.

It was therefore decided to examine the variable numbers of words uttered in response to picture tasks across schools, ages and timing of exposure to task. The children were exposed to the tasks on two occasions, once in each instructional context. The occasions were separated by a period of between ten and fourteen weeks. By considering — timing-of-exposure as a factor it would be possible to test for evidence of a practice effect.

Clearly any conclusions drawn from data as crude as this must be treated with caution. The data collected was not in a form appropriate even to the calculation of a statistic such as Mean Length of Utterance. It was, however, considered a worthwhile research strategy to examine this

variable in that it may serve to indicate future areas of research interest. Even given the possibility of conducting the most elaborate forms of quantification of classroom talk, research problems of interpretation are considerable, Romaine S. (1984). This analysis was conducted post hoc and there was neither the time nor possibility of obtaining relevant data from the children concerned. It was considered only after the senior children had left school and many of the junior children were in a range of different classes.

The number of words in each of the transcribed statements was counted.

As there were:-

1. Ten picture tasks.
2. Two occasions of presentation.
3. Four schools.
5. Ten children

a total sample of one thousand six hundred statements was available for analysis.

Results

The bar charts presented below display the data. See Figures 7, 8 and 9. For clarity the first graph shows the average number of words per statement for junior and senior children on both the first and second presentations. The two subsequent graphs show the first and second presentations for the junior and senior children separately.

Figure 7

Average no. of words uttered. Junior & Senior. (n=100)

No. of words.

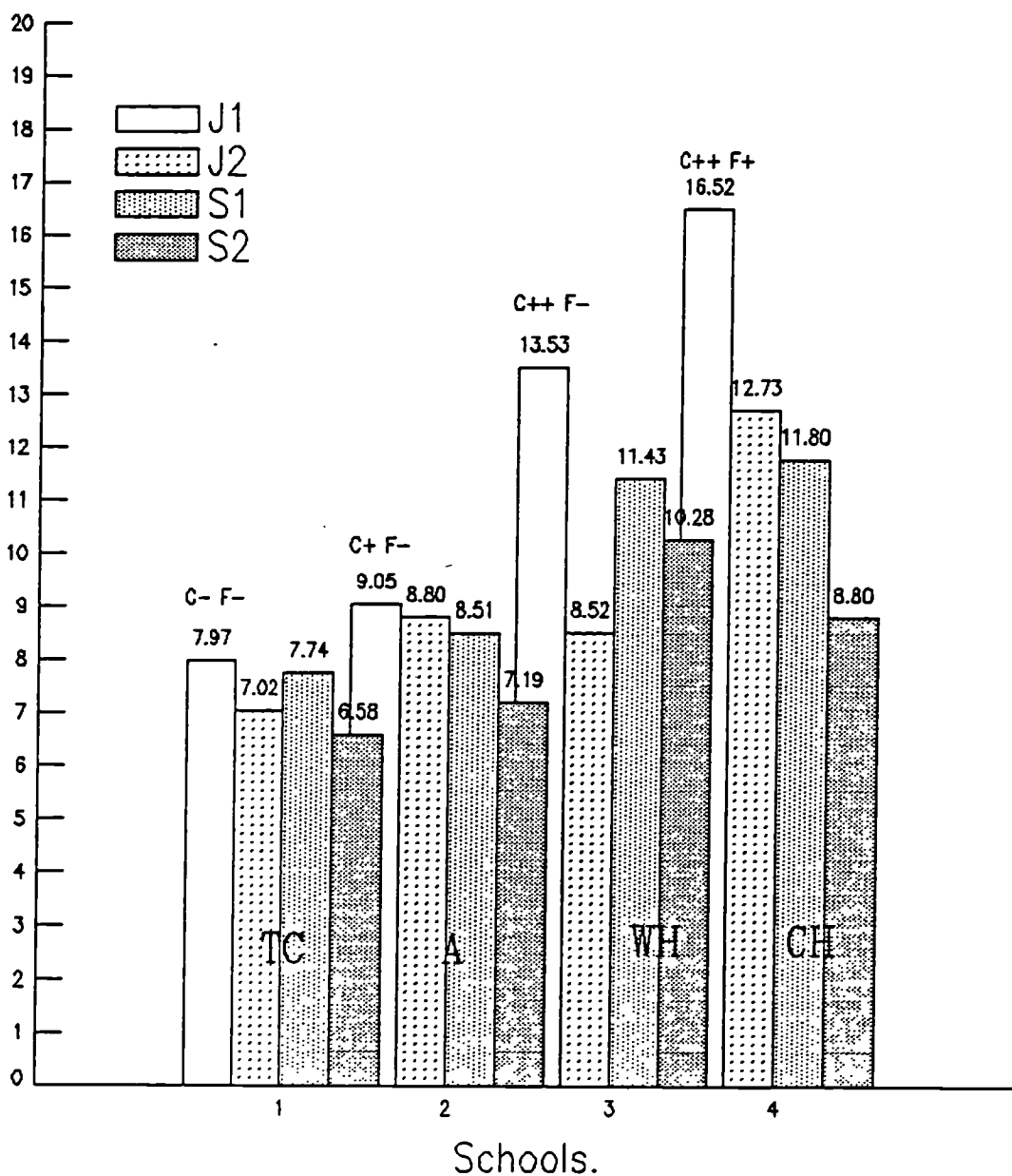


Figure 8

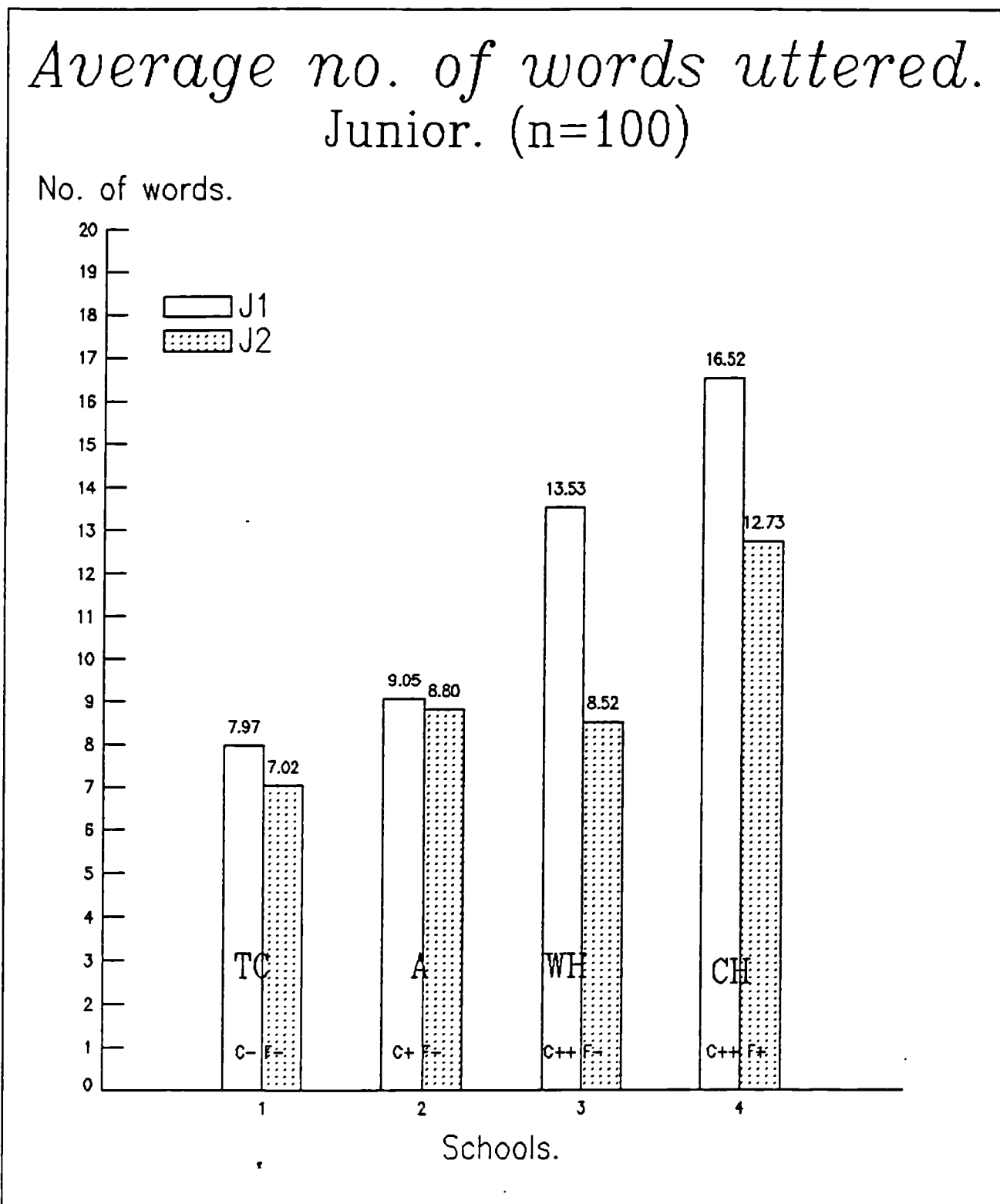
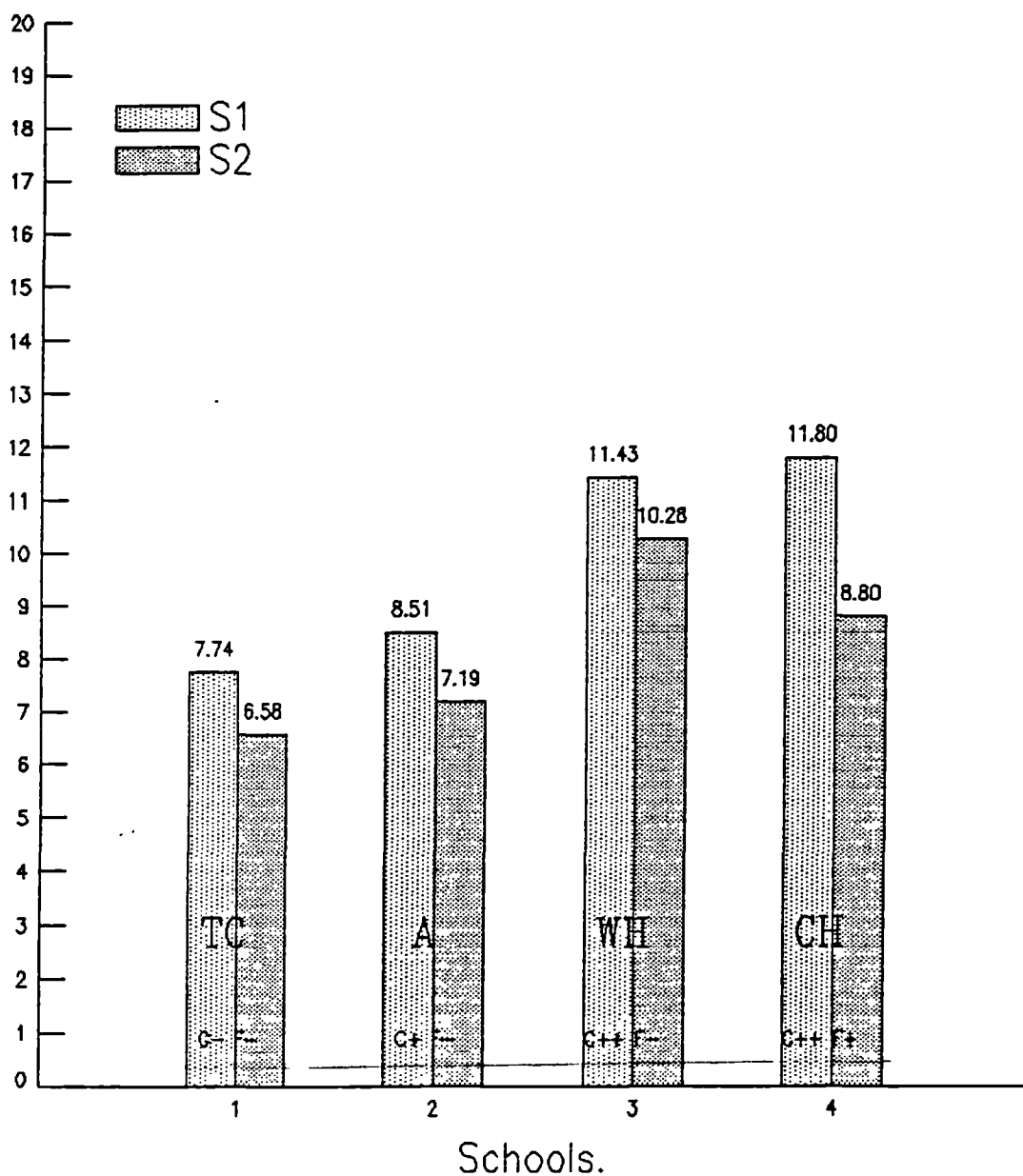


Figure 9

Average no. of words uttered. Senior. (n=100)

No. of words.



As a preliminary to the main analysis of the data a t-test across social class groupings for the 1st and 2nd dates was carried out.

Social Class	Number of cases	Mean	t Value	DF	2 Tail Prob
<hr/>					
I, II & III non manual					
Date 1	50	11.32	-0.75	78	0.455
Date 2	50	8.8			
III & IV manual					
Date 1	30	12.33	-0.78	78	0.435
Date 2	30	9.6			

There were no significant differences in the length of utterance on each occasion on the basis of social class of children.

A repeated measures analysis of variance was performed for the ten tasks and two dates within subject factor and four schools, two ages between subject factors. The univariate tests for each task were also performed but the multivariate analysis was considered more appropriate because the univariate tests ignore intercorrelations between the tasks and also because they do not account for the multiple comparison of the levels of a given factor.

The results indicate that there is a significant main effect for school but not for age of child nor the interaction.

Analysis of Variance Summary Table. Dependent variable was no. of words spoken as a measure repeated over ten picture description tasks on two dates. Between subject independent variables were school and age of children.

Source	SS	DF	MS	F	Sig of F
<u>Between Subjects Effects</u>					
Within cells	23625.33	72	328.13		
Constant	151418.27	1	151418.27	461.46	0.000
School	6214.76	3	2071.59	6.31	0.001
Age	1120.58	1	1120.58	3.42	0.069
School by Age	1347.23	3	449.08	1.37	0.259
<u>Within Subject Effects (Pictures)</u>					
Within cells	16838.13	648	25.98		
Pictures	3103.84	9	344.87	13.27	0.000
School x Pictures	1602.91	27	59.37	2.28	0.000
Age x Pictures	379.18	9	42.13	1.62	0.105
School x age x Pictures	525.29	27	19.46	0.75	0.818
<u>Within Subject Effects (Date)</u>					
Within cells	1137.43	72	15.80		
Date	84.18	1	84.18	5.33	0.024
School x Date	50.52	3	16.84	1.07	0.369
Age x Date	29.43	1	29.43	1.86	0.177
School x Age x Date	53.59	3	17.86	1.13	0.342
<u>Within Subject Effects (Pictures x Time)</u>					
Within cells	11294.63	648	17.43		
Pictures x Date	776.73	9	86.30	4.95	0.000
School x Pictures x Date	564.55	27	20.91	1.20	0.224
Age x Pictures x Date	163.93	9	18.21	1.04	0.402
School x Pictures x Date x Age	196.53	27	7.28	0.42	0.996

Various subsets of the data were analyzed in order to investigate the data more fully as regards the significant effects.

1. Age of Children

The data for each school was analysed as a one-way analysis of variance with length of statement as the dependent variable and age as the independent variable. The analysis was one with repeated measures of ten pictures and two dates of presentation. On inspection the only significant age effect was in Cadbury Hill.

Summary of Age Effect Analyses for each School

School	Age effect F value	Significance
Treliske County	0.10	0.750
Ashurst	0.60	0.447
William Hardie	0.40	0.842
Cadbury Hill	4.63	0.045

Date of Presentation

The data from each date of presentation were considered separately by means of a two-way analysis of variance with length of statement as the dependent variable and school and age as independent variables with ten repeated measures on picture description tasks for each subject. This was performed twice, once for each date of presentation.

Summary of Analysis for first date of presentation

Source	SS	DF	MS	F	Sig of F
--------	----	----	----	---	----------

Between Subjects

Within cells	16138.05	72	224.14		
Constant	91057.78	1	91057.78	406.25	0.000
School	5669.69	3	1889.90	8.43	0.000
Age	1173.70	1	1173.70	5.24	0.025
School by Age	714.07	3	238.02	1.06	0.371

Within Subjects

Within cells	14917.85	648	23.02		
Pictures	1824.11	9	202.68	8.80	0.000
School x Pictures	725.77	27	26.88	1.17	0.256
Age x Pictures	242.19	9	26.91	1.17	0.312
School x Age x Pictures	431.79	27	15.99	0.69	0.876

Summary of Analysis for second date of presentation

Source	SS	DF	MS	F	Sig of F
<u>Between Subjects</u>					
Within cells	13049.00	72	181.24		
Constant	61776.13	1	61776.13	340.86	0.000
School	1552.10	3	507.37	2.80	0.046
Age	171.13	1	171.12	0.94	0.334
School by Age	766.05	3	255.35	1.41	0.247
<u>Within Subjects</u>					
Within cells	8790.60	648	13.57		
Pictures	725.00	9	80.56	5.94	0.000
School x Pictures	515.17	27	19.08	1.41	0.084
Age x Pictures	106.10	9	11.79	0.87	0.553
School x Age x Pictures	210.73	27	7.89	0.58	0.959

Thus there was a significant ($p = 0.025$) age effect on the first date presentation. Across the schools, on the first date the senior children said less (Means: junior = 11.77, senior 9.87). There is also confirmation here of a weaker school effect on the second date (main effect is significant $p = 0.0$ on date 1 and $p = 0.046$ on date 2 for school.) The age effect on the second date is also non-significant ($p = 0.334$). It would appear the practice effect of performing the tasks twice is to tend to reduce the amount that was said and for variation between age groups and schools to decrease.

When the significant age effect in Cadbury Hill is investigated on both dates this trend is confirmed. The age effect is just significant ($p = 0.049$) on date 1 and does not achieve significance on date 2 ($p = 0.102$).

These statistics were gained through one-way analyses of variance for the length of statement data from Cadbury Hill as a dependent variable and age as a between subject independent variable. Within subject repeated measures on ten pictures were used in the analysis which was conducted separately for both dates of presentation.

Summary for analyses within Cadbury Hill on separate dates of presentation

Source	SS	DF	MS	F	Sig of F
<u>First date</u>					
Within cells	6750.8	18	375.05		
Constant	39396.25	1	39396.25	105.04	0.000
Age	1874.3	1	1874.3	4.99	0.049
<u>Within Subjects</u>					
Within cells	6010.05	162	37.10		
Pictures	536.31	9	59.59	1.61	0.117
Age by Pictures	92.54	9	10.28	0.28	0.980
<u>Second Date</u>					
Within cells	5221.73	18	290.10		
Constant	22408.45	1	22408.45	77.24	0.00
Age	861.12	1	861.12	2.97	0.102
<u>Within Subjects</u>					
Within cells	2998.97	162	18.51		
Pictures	421.91	9	46.88	2.53	0.010
Age by Pictures	158.82	9	17.65	0.95	0.481

Given the indication that the practice effect results in less information with which to discriminate between schools and ages on the second date, a further analysis was conducted. For each age of children a one-way analysis of variance was conducted with length of statement as the dependent variable and school as the independent variable. Repeated measures across the ten picture description tasks for each subject were analysed. This was for data from the first presentation of the pictures only.

Summary of Analysis of Variance for each age group on the first date

Source	SS	DF	MS	F	Sig of F
<u>JUNIOR</u>					
<u>Between Subjects</u>					
Within cells	9668.62	36	268.57		
Constant	56453.76	1	56453.76	210.20	0.00
School	4865.42	3	1621.81	6.04	0.002
<u>Within Subjects</u>					
Within cells	8364.98	324	25.82		
Pictures	1002.29	9	111.37	4.31	0.00
School x Pictures	628.93	27	23.29	0.90	0.609
<u>SENIOR</u>					
<u>Between Subjects</u>					
Within cells	6469.43	36	179.71		
Constant	35777.7	1	35777.7	199.09	0.000
School	1518.35	3	506.12	2.82	0.053
<u>Within Subjects</u>					
Within cells	6552.87	324	20.22		
Pictures	1064.00	9	118.22	5.85	0.00
School x Pictures	528.63	27	19.58	0.97	0.513

Thus on the first presentation of the picture tasks the length of statements for junior children significantly differ ($p = 0.002$) across schools. However, in the senior classes the significance of the school decreases ($p = 0.053$).

As a follow-up test to the repeated measures analysis of variance a multiple discriminant function analysis was performed, using four comparison groups (schools) involved in the study. As there were significant main effects for school and date of utterance and of the age of child, it was decided to examine the data using multiple discriminant function analysis over the following subsets of the data, with schools as the group of primary interest.

1. Across both dates and ages.
2. For first dates across both ages.
3. For second dates across both ages.
4. Across both dates for junior aged children.
5. For first date for junior aged children.
6. For second date for junior aged children.
7. Across both dates for senior aged children.
8. For first date for senior aged children.
9. For second date for senior aged children.

Huck et al (1974) state that in presenting the results of multiple discriminant function analysis an author should detail the following results.

- (a) The results of a preliminary Wilks' Lambda test to demonstrate whether the groups (in this case schools) do differ significantly on the predictor variables (in this case picture tasks). This is in effect a test of equality of school centroids.

- (b) An examination of the discriminant function and an elimination of those that do not help account for the discriminative power of the tasks.
- (c) If only one or two discriminant functions appear to be of value a graph is drawn of group centroids.
- (d) The F statistics and significances for Mahalanobis' distances between groups are reported.

Analyses 1-9 will now be presented in this form with the abbreviation M.D.F.A. representing Multiple Discriminant Function Analysis.

Results of M.D.F.A.

- (a) Preliminary Wilks' Lambda test

	Data	Wilks' Lambda	Significance of F
1.	Both dates both ages	0.21099	0.0003 **
2.	1st date both ages	0.45157	0.0020 **
3.	2nd date both ages	0.52891	0.0320 *
4.	Both dates junior	0.035119	0.0068 **
5.	1st date junior	0.2942215	0.1224
6.	2nd date junior	0.316836	0.1836
7.	Both dates senior	0.055511	0.0586 *
8.	1st date senior	0.313629	0.1741
9.	2nd date senior	0.33811	0.2537

** = sig at 1% level * = sig at 5% level

Whilst 7. is technically not significant (significance > 0.05) it was investigated further. The schools are seen as differing significantly on the picture task predictor variables for the data in analyses 1,2,3,4 and 7.

(b) The discriminant functions for the analyses 1,2,3,4 and 7 are presented below:-

A multiple discriminant function analysis will result in two or more prediction equations. The maximum number of possible prediction equations is always equal to one less than the number of criterion groups (schools) or predictor variables. The equations are used to predict group membership (school) by substituting the task scores in equations which are similar in form to multiple regression equations. Linear combinations of all the variables (tasks) are used to distinguish between schools.

These equations do not contribute equally to successful prediction of group (school) membership. Each discriminant equation explains a certain percentage of between school variability. After the first equation the second attempts to account for the remaining between school variability and subsequently the third equation attempts to account for that which remains.

Analysis 1

Both dates all ages

Discriminant Function	Eigen Value	Percent of Variance
I	1.680	71.36
II	0.478	20.31
III	0.196	8.33

Functions I and II account for 91.67% of the variance.

Analysis 2

1st date all ages

Discriminant Function	Eigen Value	Percent of Variance
I	0.71027	71.89
II	0.18520	18.75
III	0.09248	9.36

Functions I and II account for 90.46% of the variance.

Analysis 3

2nd date all ages

Discriminant Function	Eigen Value	Percent of Variance
I	0.45339	61.36
II	0.21385	28.94
III	0.07169	9.70

Functions I and II account for 90.30% of the variance.

Analysis 4

Both dates junior

Discriminant Function	Eigen Value	Percent of Variance
I	5.488818	70.75
II	1.54214	19.88
III	0.72637	9.36

Functions I and II account for 90.64% of the variance.

Analysis 5

Both dates senior

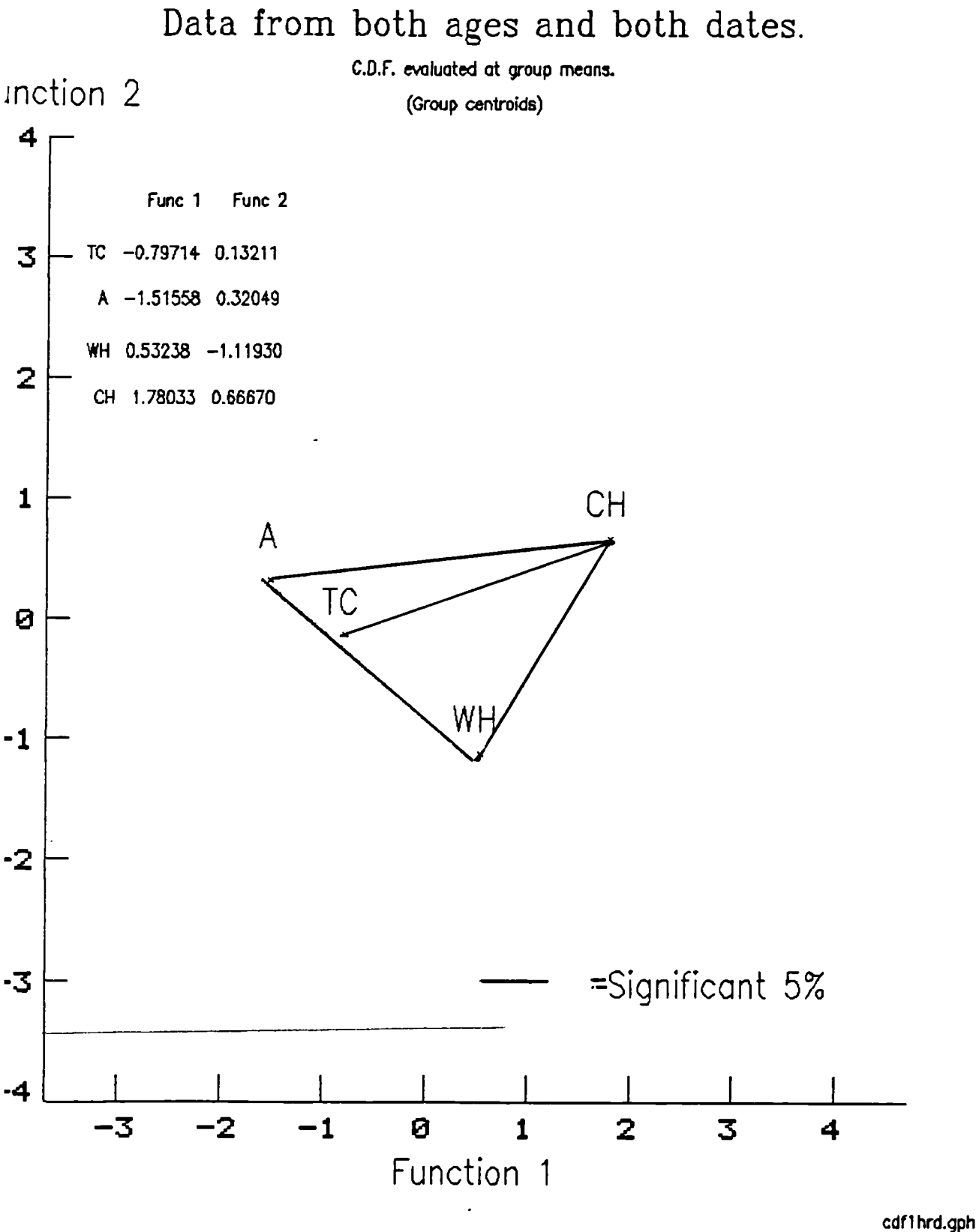
Discriminant Function	Eigen Value	Percent of Variance
I	3.782488	66.55
II	1.14604	20.16
III	0.75521	13.29

Functions I and II account for only 86.7% of variance; this is explained by the marginal significance of Wilks' lambda in this case.

For the sake of graphic representation Functions I and II will be used to display the relative positions of the school centroids. Inserted into the graph of each analysis are the relevant values for each discriminant function for each school centroid. After each graph the F statistics and significances for Mahalanobis' distances between groups are reported.

The graphs of school centroids attempt to show that the discriminant functions do discriminate between the schools. The centroids are obtained by substituting means for each variable (task) in the discriminant function equations (I and II) for each school. The scores resulting from these operations are then plotted against each other. Interpretation of the significance of each function was not relevant here. It did not matter which combinations of task responses discriminated between schools. The important issue was as to whether these combinations did discriminate between the schools.

Figure 10



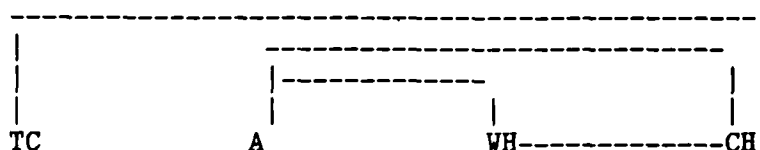
Mahalanobis' Distances

Data from both ages and both dates

F statistics and significances between pairs of schools. Each F statistic has 20 and 57.0 degrees of freedom.

Group		1	2	3
		Treliske County	Ashurst	William Hardie
1	Ashurst	0.73782		
		0.7708		
2	William Hardie	1.4909	2.4068	
		0.1209	0.0050	
3	Cadbury Hill	2.8227	4.1836	1.7805
		0.0011	0.0000	0.0462

Mapping the significant Mahalanobis' distances onto the relevant means across pictures reveals the following patterns (a line indicates a 5% level of significance).



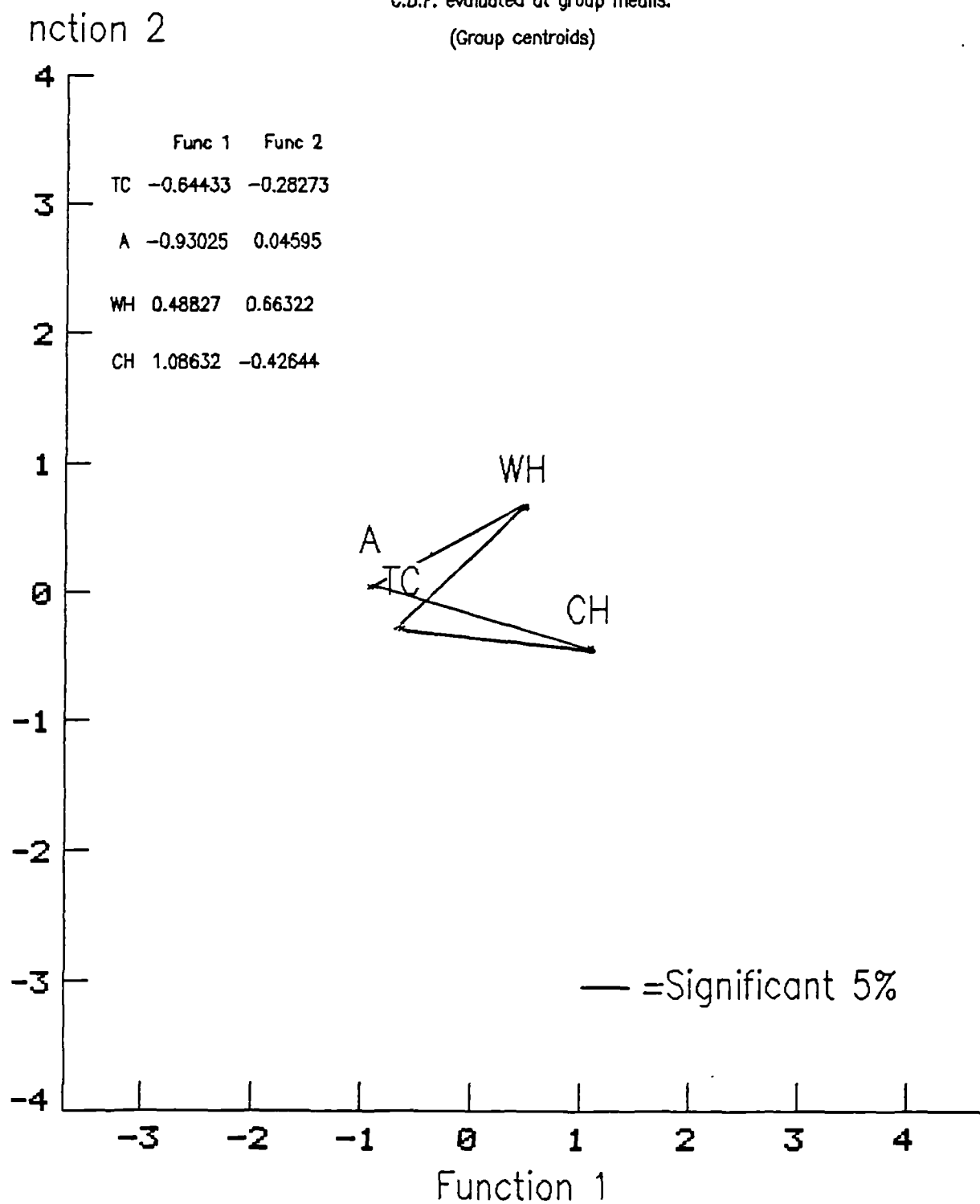
Mean = (7.32) (8.38) (10.93) (12.46)

When all the data available ^{were} used in the analysis the significant Mahalanobis' distances revealed a pattern of differences which relates in some way to the general patterns in the values of classification and framing regulating aspects of instructional practice in the schools. In general it appears that strong values are associated with longer statements.

Figure 11

Data from 1st date both ages.

C.D.F. evaluated at group means.
(Group centroids)



cdf2hrd.gph

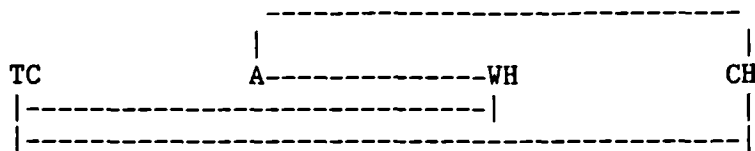
Mahalanobis' Distances

Data from both ages on first date

F statistics and significances between pairs of schools. Each F statistic has 10 and 67.0 degrees of freedom.

Group		1	2	3
		Treliske County	Ashurst	William Hardie
1	Ashurst	0.72996 0.6937		
2	William Hardie	1.9982 0.0472	2.3307 0.0201	
3	Cadbury Hill	2.9254 0.0042	3.8363 0.0004	1.4179 0.1917

Map of significant distances and means



Mean = (7.8) (8.78) (12.48) (14.6)

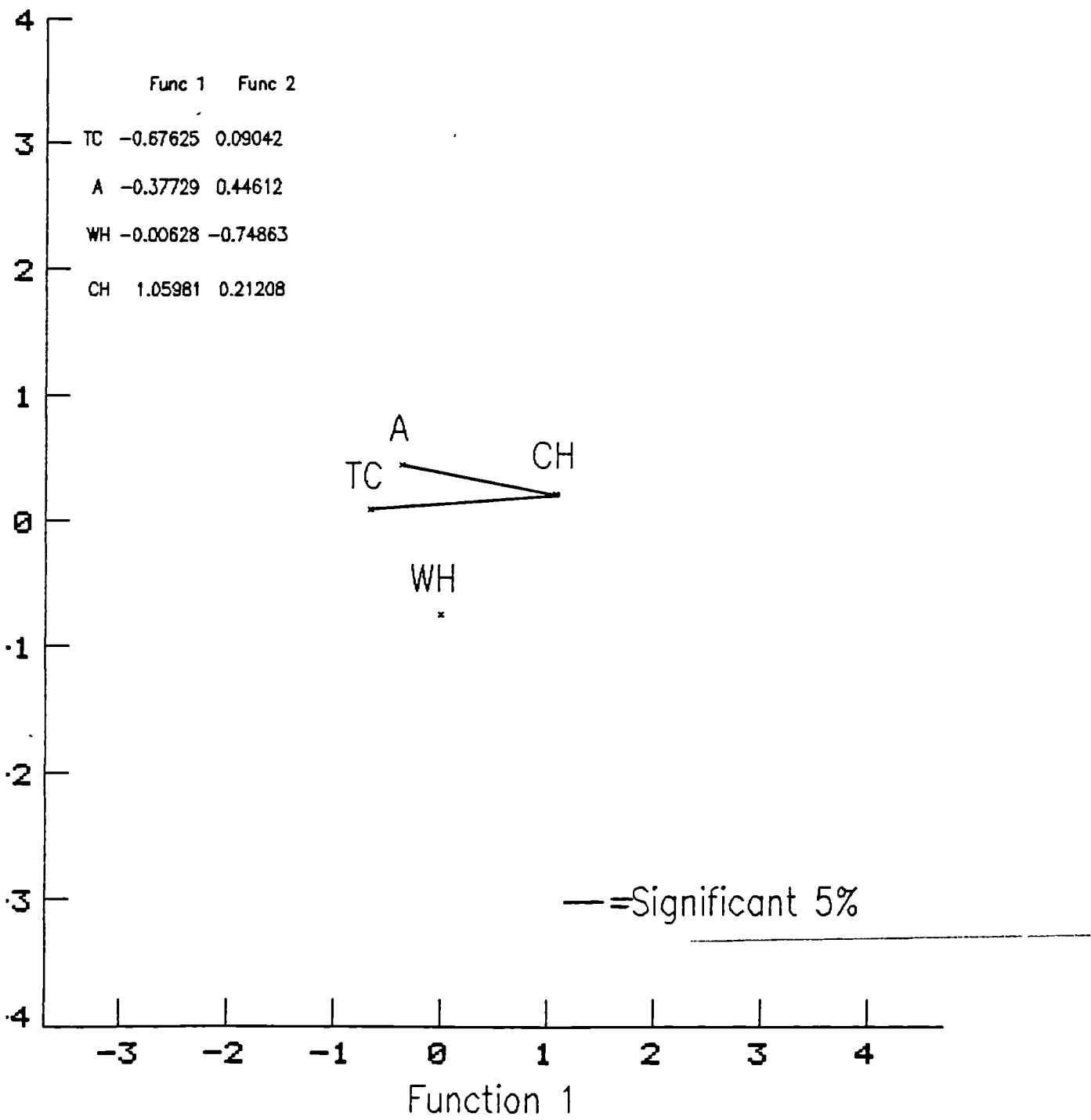
Again a similar pattern of significant differences was revealed in the data for the first date of task presentation as in the whole data set.

Figure 12

Data from 2nd date both ages.

C.D.F. evaluated at group means.
(Group centroids)

Function 2



cdf3hrd.gph

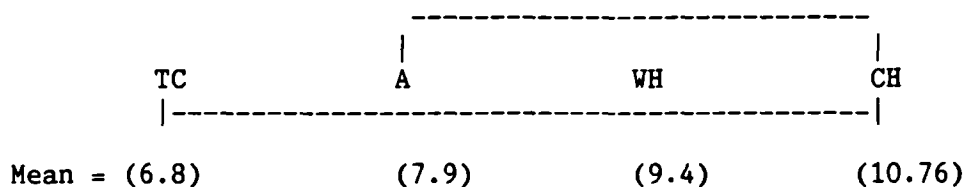
Mahalanobis' Distances

Data from both ages and second date

F statistics and significances between pairs of schools. Each F statistic has 10 and 67.0 degrees of freedom.

Group		1	2	3
		Treliske County	Ashurst	William Hardie
1	Ashurst	0.62081		
		0.7909		
2	William Hardie	1.2260	1.4190	
		0.2910	0.1912	
3	Cadbury Hill	2.7258	2.0452	1.8647
		0.0071	0.0419	0.0660

Map of significant distances and means

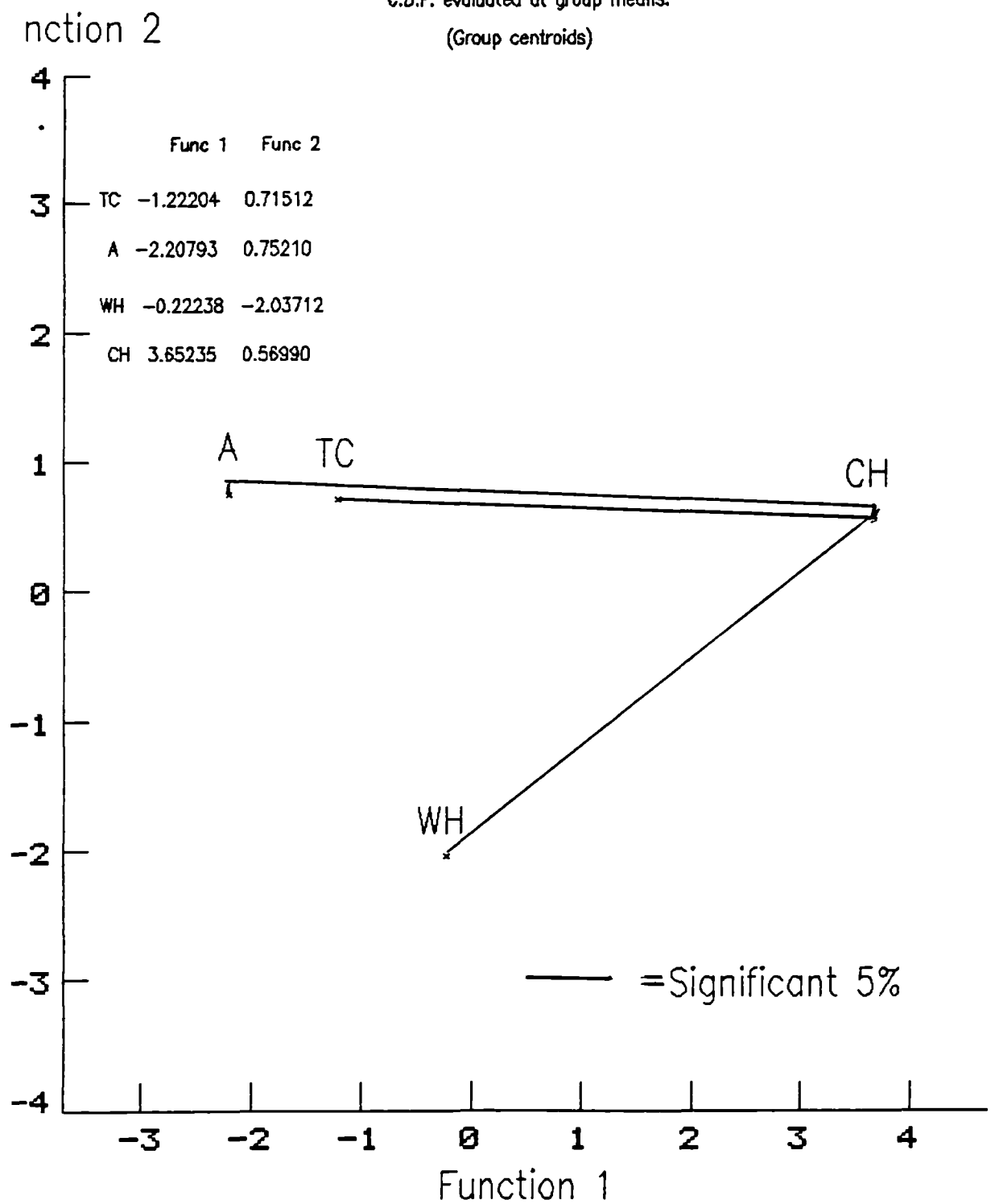


On the second date of presentation the general trend in the data was the same as for the first date. However, the significance of the differences was much lower, implying that some kind of practice effect was operating.

Figure 13

Data from both dates Junior age.

C.D.F. evaluated at group means.
(Group centroids)



cdf4hrd.gph

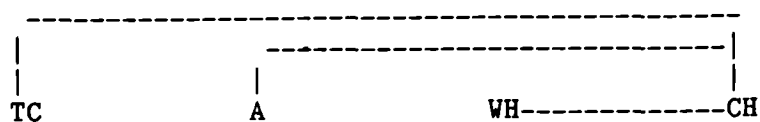
Mahalanobis' Distances

Data from junior age children on both dates

F statistics and significances between pairs of schools. Each F statistic has 20 and 17.0 degrees of freedom.

Group		1	2	3
		Treliske County	Ashurst	William Hardie
1	Ashurst	0.71706 0.7635		
2	William Hardie	1.1928 0.3598	1.5071 0.1985	
3	Cadbury Hill	3.0525 0.0119	4.1372 0.0023	2.5797 0.0266

Map of significant distances and means



Mean = (7.49) (8.92) (11.02) (14.62)

The data for the junior age group was again in general accord with the trends in the values of classification and framing.

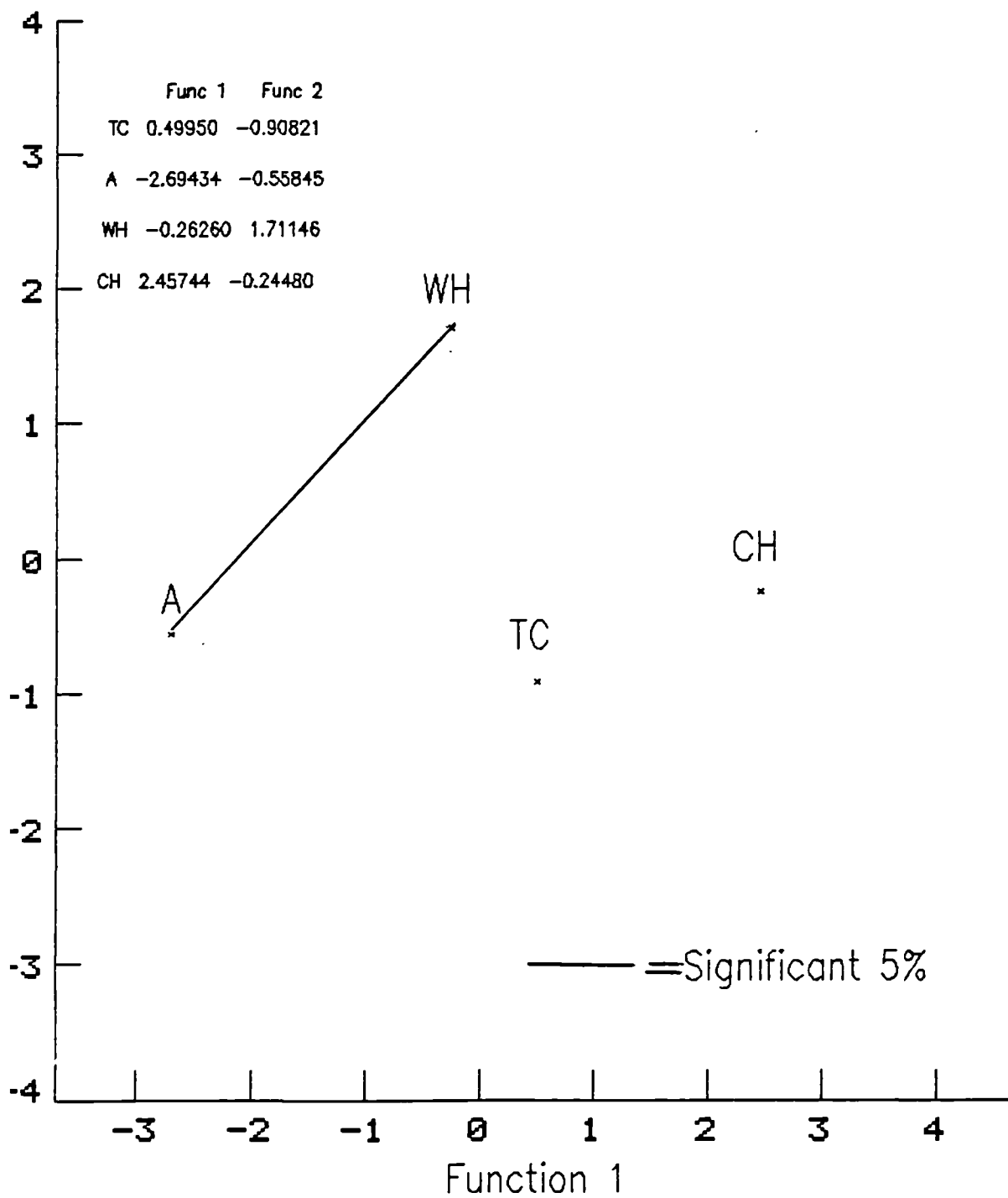
Figure 14

Data from both dates Senior age.

C.D.F. evaluated at group means.

(Group centroids)

Function 2



cdf5hrd.gph

Mahalanobis' Distances

Data from senior children on both dates

F statistics and significances between pairs of schools. Each F statistic has 20 and 17.0 degrees of freedom.

Group		1	2	3
		Treliske County	Ashurst	William Hardie
1	Ashurst	1.6107 0.1625		
2	William Hardie	0.97309 0.5281	1.4081 0.2401	
3	Cadbury Hill	1.0219 0.4868	3.1536 0.0101	1.4951 0.2031

Map of significant distances and means

TC A-----WH CH

Mean = (7.16) (7.85) (10.855) (10.3)

The significance of the differences between schools, when the senior age data is analysed, is much lower than in the case of the junior data.

Summary of school effects on length of description data

There are clearly overall school effects and whilst these decrease in significance over both ages on the second date the trends remain in accord. The dependent variable length of statement discriminates more between schools for junior children than for the senior children, discrimination between schools at the senior level being relatively weak.

These results were then considered in the light of the school descriptions.

Comparison of school descriptions and length of statement data

	TC	A	CH	WH
<u>Junior</u>				
<u>School</u>				
Subjects	C-- F--	C- F-	C+ F++	C++ F+
Horizontal				
<u>Classroom</u>				
Instructional	C-- F--	C- F-	C++ F++	C++ F++
Practice				
Statement length mean	7.49	8.92	14.62	11.02
<u>Senior</u>				
<u>School</u>				
Subjects	C-- F--	C-- F+	C- F+	C- F+
Horizontal				
<u>Classroom</u>				
Instructional	C-- F--	C- F--	C- F-	C- F-
Practice				
Statement length mean	7.16	7.85	10.3	10.85

It would be inappropriate to attribute the fall in length of statement means with age to the weakening of values of classification and framing with age. The experimental design did not allow for any control for other factors related to adolescent development.

However, the trend in the data at both ages strongly indicates that children tend to say more, in the context of these task settings, in schools with strong values of classification and framing and less in schools with weaker values. This trend in the data parallels that which was suggested in the data on judged discriminations between contexts. Children were seen to say more when they also were judged as being able to realize some of the criteria of communicative competence of specific subjects (discourses).

The details of an analysis of correlation of length of statement and judged ability to discriminate between subjects (discourses) are given below.

The characteristics of utterances used by the teacher observers in their judgements

The third question asked of the teacher observers in the main study was as to how they arrived at their decisions with respect to the eliciting context of the children's utterances. Their replies took a variety of forms. On the one hand single words appeared to discriminate between utterances and on the other feelings evoked by the utterances were given as subjective justification.

Of those utterances judged by the teacher observers as artistic the following explanations were given:-

1. The names of colours.
2. Adjectives referring to colour: bright, shiny, beautiful, nice.
3. Words or phrases declared to be poetic or evoking of atmosphere and emotion in a personalized sense.
For instance, "wriggley iggley" was used to describe the dolphins, as was "jumping acrobats".
4. Adverbs and modifiers related to action such as "splashing", "skidded", "blazes".
5. Adjectives referring to form - "shaped", "rocky".
6. Imprecise references to measurements - "very high", "little bit", i.e. intensifiers.

In general if the picture itself was discussed as an artefact with references either to how it was "drawn" or to elements within the construction "the background", or the quality of the print or

production. Emphasis was placed on the use of "woolly" descriptors. The major influence appeared to be the description of the picture as an object itself rather than the description being referred to the content of the picture. That is, the picture was treated as if there were a frame around it and it became the object of reference, not specifically that which it signified.

Whereas with statements noted as elicited by a scientific/mathematical context the emphasis was much more on analytic, investigative statements. When the child became concerned with the classification of the objects in the pictures and to speculate on the relations of cause and effect, the teachers applied the label scientific. Any reference to environmental concern and/or conservation issues also constituted a marker. Technical issues related to "how" and "where" questions focussed again on ^{whether} the objects portrayed were considered important.

Technical and/or factual words and phrases such as those following were taken as scientific signifiers:-

"square blocks of energy"

"sub zero"

"gravity"

"muscles"

Classificatory references such as "sea life" and "salty water", along with references to contrasts "light and dark" were used. The how, where and why questions took the following forms:-

"how it moves"

"how it works"

"how it sucks up"

"where they are going"

"where it is going"

"heat rises"

"moved by"

"keeping warm"

Biological and physical references were also noted. Descriptions of animal tracks, size of wings, shape of petals, growth of flowers ("growing/coming out"). Properties of phenomena such as fire would be noted with reference to a set of descriptors such as:-

"danger", "hot", "burning", "steam", "gas".

Any words which were taken as being technical, particularly with reference to the space pictures:-

"space launching", "astronaut", "space station", "moon buggy",
"antenna", "gas rocket".

In summary, then, the teachers appear to distinguish between technical, precise, explanatory or investigative references to the phenomena portrayed in the pictures on the one hand and references which focus on the picture as an object, its qualities, the feelings, sensations it evokes and that have poetic connotations.

Bruner has recently argued that there are two modes of cognitive functioning or thought

"each providing distinctive ways of ordering experience, of constructing reality. The two (though complementary) are irreducible to one another. Efforts to reduce one mode to the other or to ignore one at the expense of the other inevitably fail to capture the rich diversity of thought."

Bruner J. (1986) p.11

These two modes of thought are, in Bruner's terms: the paradigmatic or logico scientific one - "attempts to fulfil the ideal of a formal-mathematical system of description", p.12, and the narrative mode, which "leads instead to good stories, gripping drama, believable (but not necessarily "true") historical accounts", p.13.

Bruner attempts to discern the different kinds of truth which apply within these two modes

"Each of the ways of knowing, moreover, has operating principles of its own and its own criteria of well-formedness. They differ radically in the procedures for verification. A good story and a well-formed argument are different natural kinds. Both can be used as means for convincing another. Yet what they convince of is fundamentally different: arguments convince of their truth, stories of their lifelikeness. The one verifies by eventual appeal to procedures for establishing formal and empirical proof. The other establishes not truth but verisimilitude."
Bruner (1986) p.11

There are echoes of Bruner's claims in the data generated in this investigation. The criteria of competence held by the teachers who judged these children's statements appear, at the very least, to have been generated within different balances of these modes of thought within school subjects (discourses).

Correlation between variables across CH and TC junior

The data was available on a number of variables for the junior children in CH and TC. As previously mentioned, the junior age range has the highest degree of variation between schools for both number of words uttered and number of correctly judged discriminations. The two schools CH and TC reveal the greatest differences between schools within this age range. A Pearson product moment correlation matrix was calculated enabling comparison of all possible inter-correlations between these variables. These variables are:-

1. Length of utterance on first date (L1)
2. Length of utterance on second date (L2)
3. Number of statement pairs correctly judged by teacher evaluators in terms of the context of utterance - Observer 1 (SW1)
4. Number of statement pairs correctly judged by teacher evaluators in terms of the context of utterance - Observer 2 (SW2)
5. W.I.S.C. full score I.Q. (IQ)
6. Expressive Language scale score from I.T.P.A. (ITPA)
7. North Western Syntax Screening Test Score for expressive language (NSST)

The correlations marked * are significant, their respective values of significance being written in brackets.

Correlation matrix: data from CH and TC Junior

		L1 1	L2 2	SW1 3	SW2 4	IQ 5	ITPA 6
L1	1						
L2	2	0.731* (0.00)					
SW1	3	0.8325* (0.00)	0.6075* (0.002)				
SW2	4	0.7854* (0.00)	0.6284* (0.002)	0.8249* (0.000)			
IQ	5	0.0812 (0.367)	0.0209 (0.465)	0.2328 (0.162)	-0.0051 (0.491)		
ITPA	6	0.1418 (0.277)	0.3963 (0.042)	0.2495 (0.144)	0.0089 (0.485)	0.0022 (0.496)	
NSST	7	-0.1485 (0.266)	-0.1718 (0.234)	-0.0751 (0.377)	-0.0265 (0.456)	0.2441 (0.051)	-0.3668* (0.056)

There are high positive and significant correlations between length of description (on both dates) and number of discriminations as judged by both observers). There are no significant correlations between these variables and measures of expressive language ability and I.Q. on children in the junior sections of TC and CH, the implications being that the dependent variables of length of statement and number of judged discriminations are independent of the measures of within-child factors employed in this thesis. The data suggests that these two dependent variables are measures of acquired characteristics.

It is the contention of this thesis that these characteristics are acquired through the socially mediated transmission of the structural characteristics of the pupils' schools.

Using children as evaluators of other children's utterances

Introduction

The experiments described above have established that the schools can be characterized in terms of the perceived capacity of their pupils to realize criteria that are taken by teachers to denote a boundary between what counts as Artistic and what counts as Mathematical text. It has also been argued that this distinction in ability to produce differentially specialized Artistic and Mathematical/Scientific texts is a function of the principles of classification and framing that constitute the practice of these schools. Children in TC, with its weak values of classification and framing, tend to produce fewer statements that teachers recognize as fulfilling their criteria for valid specialized text than children in CH with its relatively strong values of classification and framing. However, within the limits of these school specific characteristics there is a degree of variation across individual children as judged by these criteria. This variation is expected to relate to the values of framing operative within the school.

This is confirmed when the variance across children within these schools is considered.

School	Framing Values (Instruction)	Standard Deviation of discrimination scores	
		Junior	Senior
TC	Weak	1.26	1.93
CH	Strong	0.9881	1.4

The weaker the value of framing the higher the variation between children within age groups within the respective schools.

This study has produced data sets which indicate the extent to which children possess specific realization rules. In that realization rules always presuppose recognition rules, the study has viewed children's realizations through the eyes of teachers whose view of legitimacy is limited through the specific recognition rules that apply to the respective discourses (subjects).

Attention in this experiment was focussed on the recognition rules. Rather than using teachers as the sources of competent distinguishing ability between texts, children were asked to distinguish between utterances of other children. If children are judged as being able to realize appropriate texts, do these children recognize the appropriate texts of others? It would seem reasonable to suppose that they can - one is unlikely to reproduce what one cannot see! These competences have been learned and thus their nature must have been sensed in some way. This conjecture was examined in this experiment. A research question closely allied to this is whether children who do not produce many statements that are judged to be distinctive to specific discourses can on the other hand correctly distinguish between other children's statements. If this were 'found to be the case an implicit developmental sequence would be revealed.

This experiment then compared the performance of children on tasks of distinguishing between statement pairs elicited from other children. This performance and that of designating the correct context of origin of each statement, was compared with other children and their teachers. The implication being that if children can match the teachers' evaluations then they are competent at distinguishing between the texts of other children.

Subjects

Four junior age children in each of the four project schools were selected on the basis of the performance of their teacher-judged competence in distinguishing between discourses. Of each of these subsets of the original sample, two were judged as having been "high scores" and two "low scores" by teacher evaluation of their ability to produce texts appropriate to each discourse.

The average scores for the subjects selected for this study were as follows:-

School	Child	Judged as having made distinction	Judged as having made distinction correctly
TC	1	5	1
TC	2	5	2
TC	3	8	4
TC	4	6	2
CH	1	3	3
CH	2	4	4
CH	3	7	6
CH	4	8	6
WH	1	7	5
WH	2	6	3
WH	3	10	8
WH	4	7	7
A	1	5	3
A	2	5	3
A	3	7	5
A	4	8	5

Materials

Three representative sets of randomized paired statements were selected from the body of data produced in the main study.

The original teacher evaluations of these statements were as follows.

	Judged as Neither	Judged Correctly	Judged Incorrectly
<u>Task No. 1</u> ("intermediary" child)			
Teacher 1	0	8	2
Teacher 2	1	7	2
<u>Task No.2</u> ("good" child)			
Teacher 1	0	10	0
Teacher 2	0	10	0
<u>Task No. 3</u> ("poor" child)			
Teacher 1	3	3	4
Teacher 2	4	4	2

That is, they were the paired statements of one child who was judged as being very good at producing distinguishable statements, one child who was very poor and one who was judged to be of intermediary capacity.

Procedure

The paired statements were read in random order to the selected children. For each pair of statements the children were asked the questions used in the modified procedure of the main study. That is after having been introduced to the task in a setting that was familiar to them, the following questions were set.

1. Can you tell these statements apart?

If the answer was affirmative:

2. Which one do you think someone said in art or which one did someone say in maths or science?

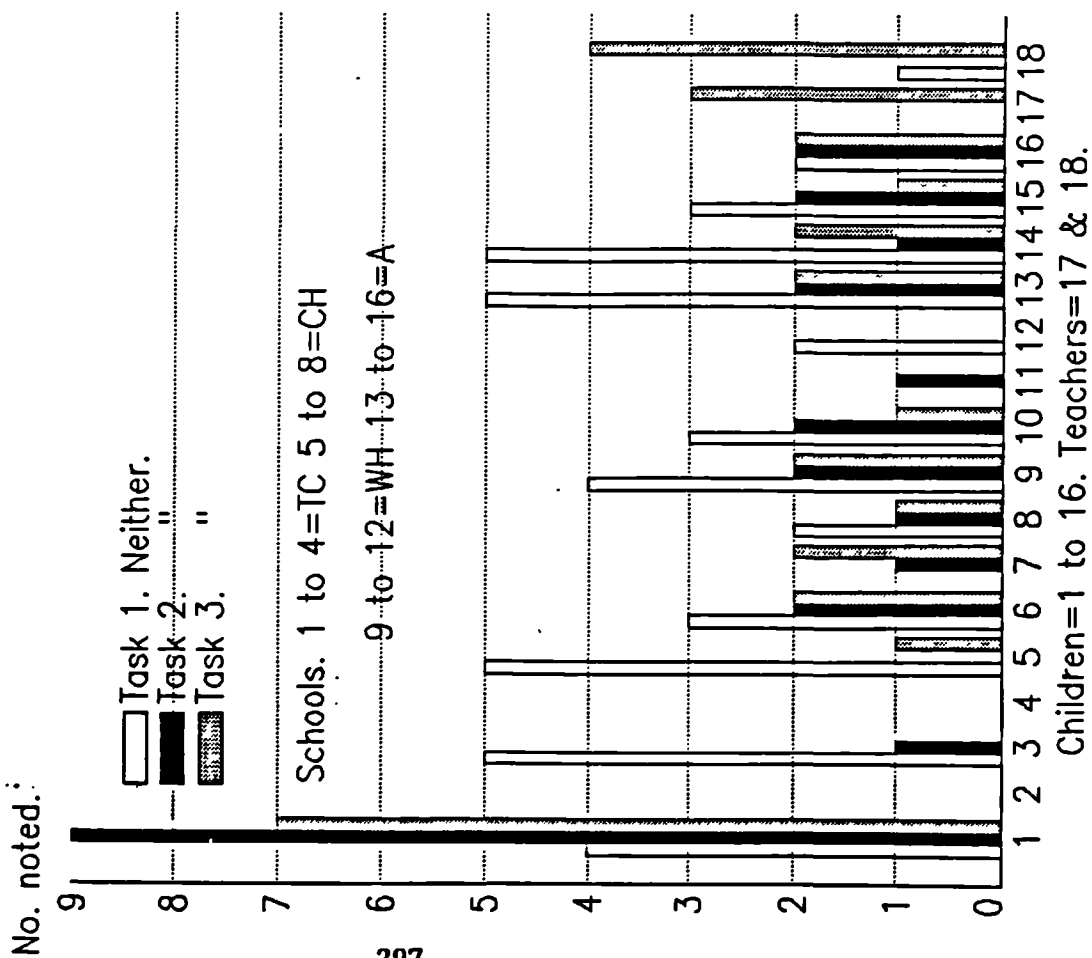
Results

The results were transformed into the Neither, True or False form and are presented graphically below. The alternative forms allow comparison across individual tasks and across summed tasks.

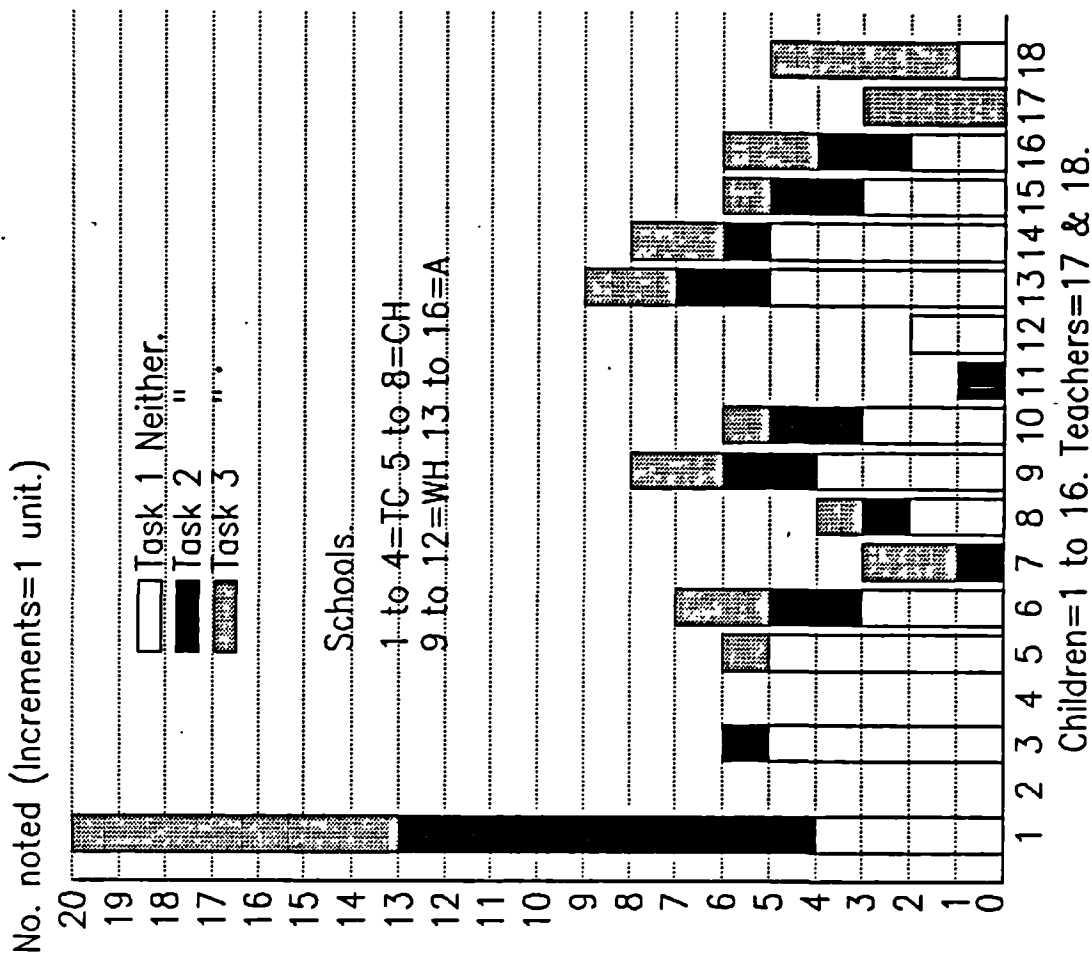
See Figure 15 for dependent variable Neither, Figure 16 for dependent variable True and Figure 17 for dependent variable False.

Note 1 Neither refers to statements that could not be discriminated by the judges.

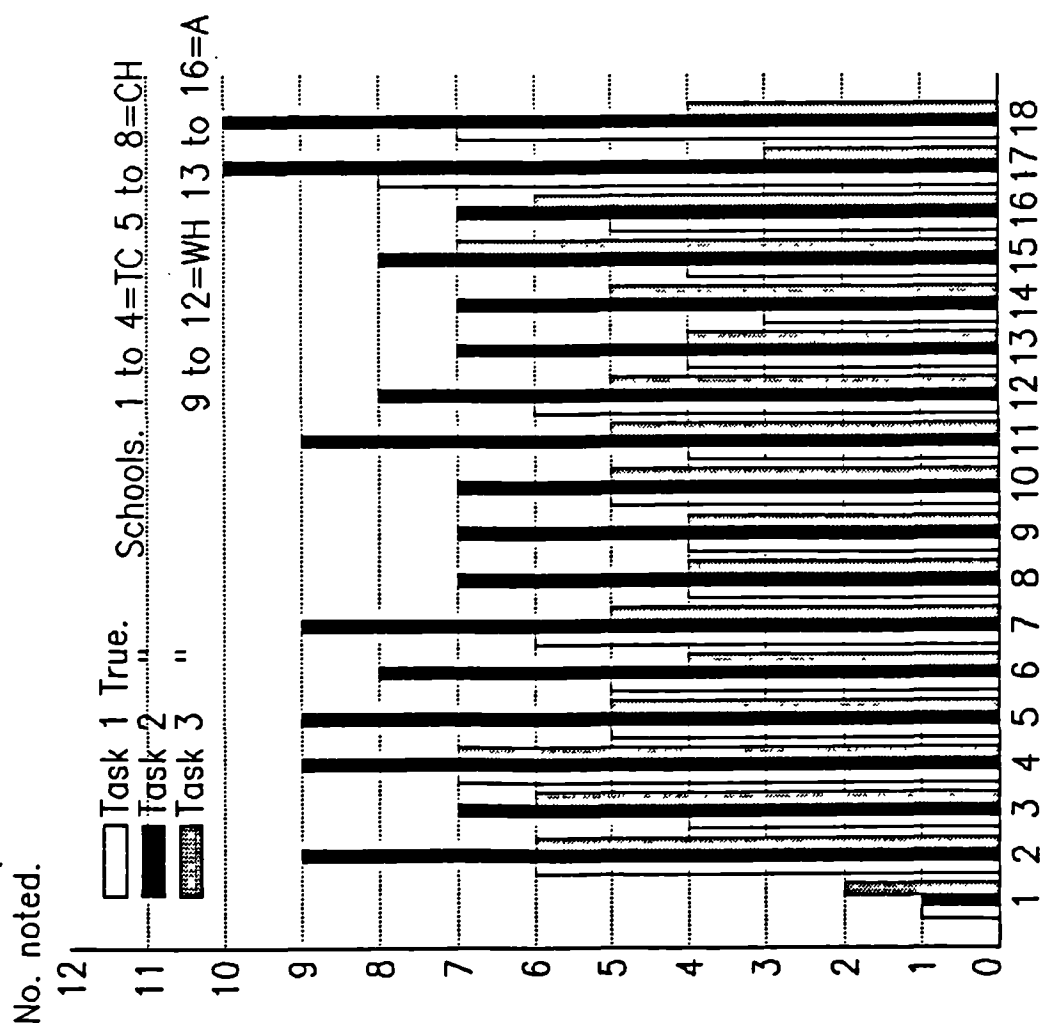
Comparing child & teacher ratings. Indicators of recognition rule.



Comparing child & teacher ratings. Indicators of recognition rule.(Overall)



Comparing child & teacher ratings. Indicators of recognition rule.



Comparing child & teacher ratings. Indicators of recognition rule.(Overall)

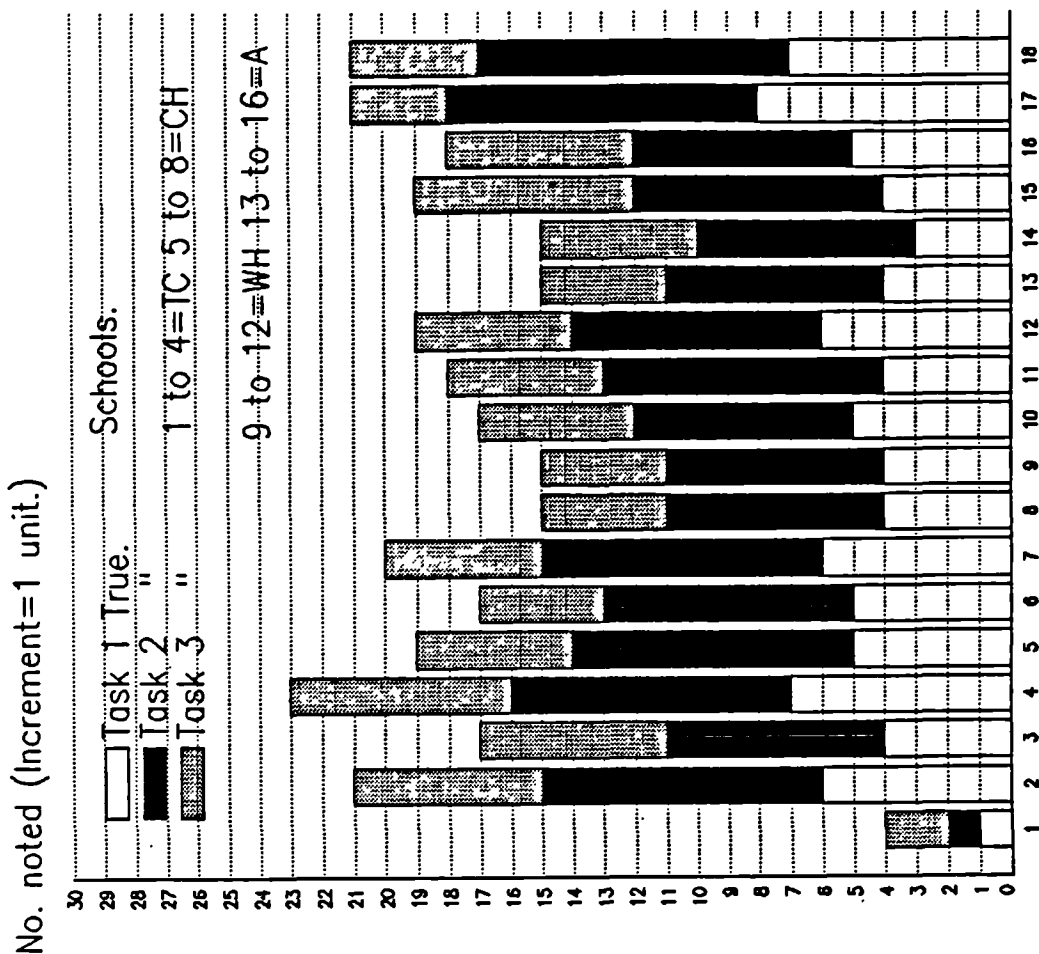
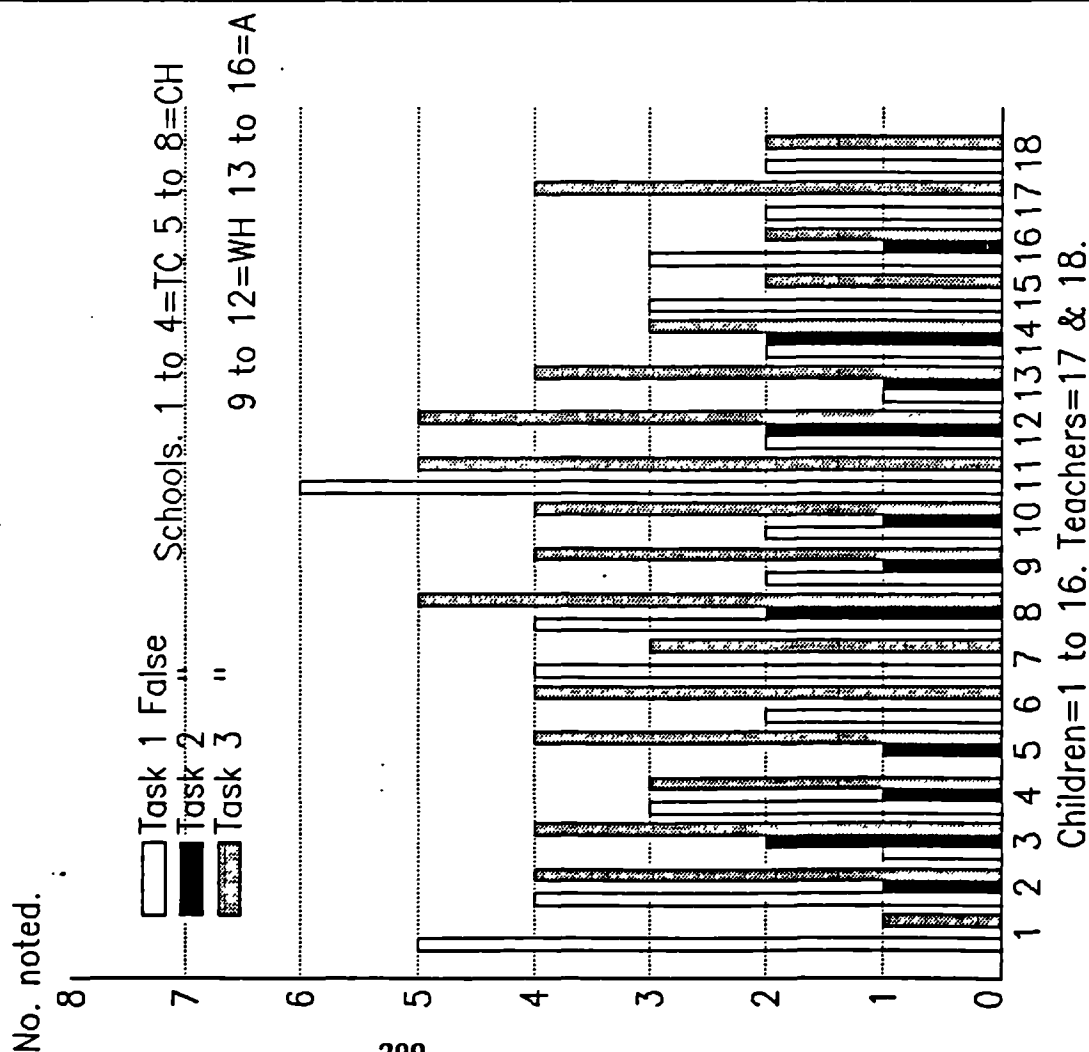
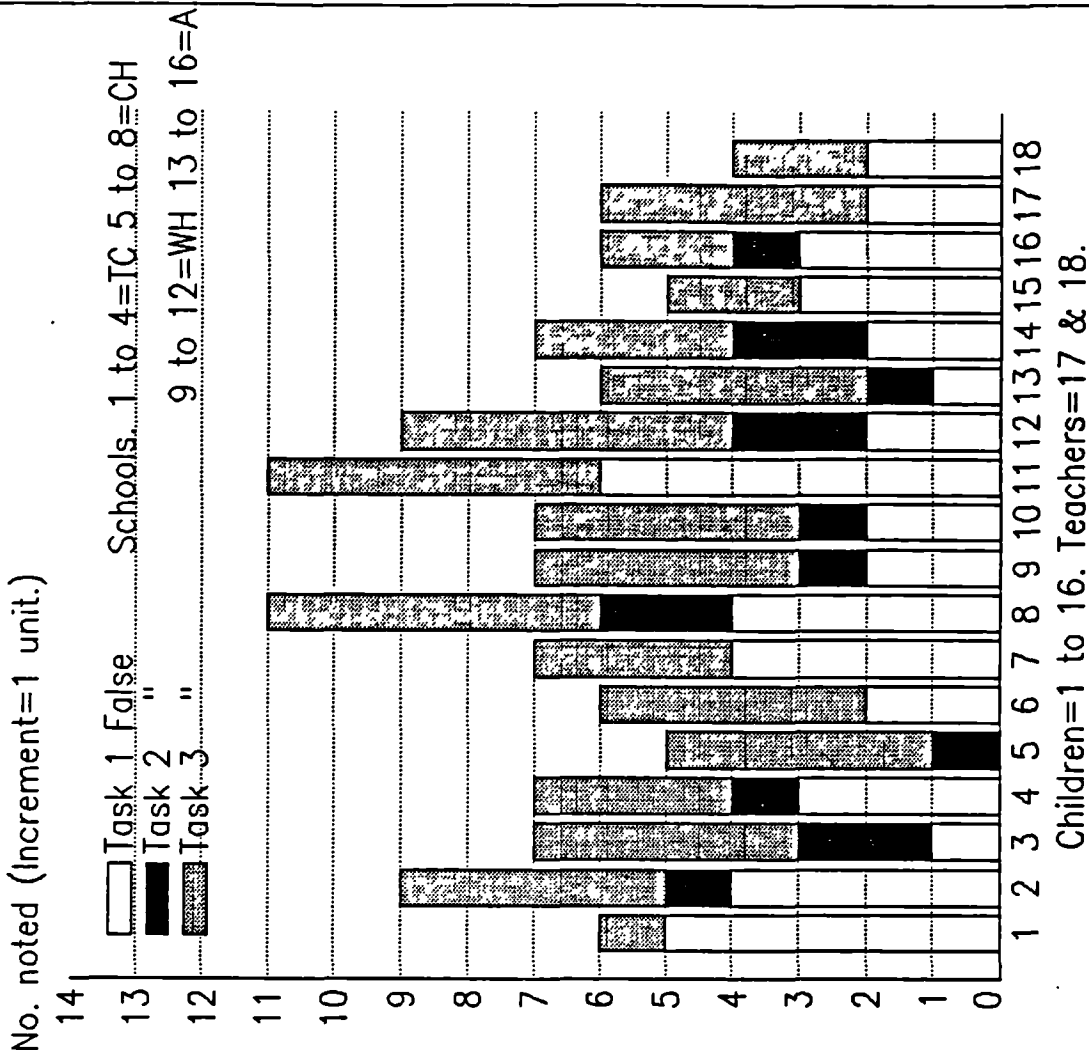


Figure 17

Comparing child & teacher ratings. Indicators of recognition rule.



Comparing child & teacher ratings. Indicators of recognition rule.(Overall)



Discussion

Inspection reveals that on the most important category of judged correctly, all but one of the children perform reasonably well. Similarly, on the category Neither only one child clearly departs from the overall pattern of response.

The confounding of failure across categories of Neither and False renders interpretation difficult. Thus concentrating on the judged category correct, it appears that all but one of the children in this sample could recognize statements as being distinguishable. This indicates that these children possess the rules of recognition for these specific texts.

The exceptional child in this case was the lowest in judged ability to produce distinguishable text. He was also the lowest in the entire cohort of eighty children as regards measured I.Q. (55).

It would appear that there are three levels of competence which children may demonstrate through performances in these schools.

1. Possession of recognition and realization rules.
2. Possession of recognition rules but not realization rules.
3. Possession of neither.

Very few children would appear to fall into category 3 and the one in this case is of low measured ability.

The majority of children in Treliske County do not realise utterances appropriate to different discourses yet they can recognize utterances belonging to different discourses.

The stronger the value of classification and framing in the school the greater the likelihood that any one child will be able to recognize and realize texts appropriate to the different discourses. That is, the stronger the boundary between subjects and the greater degree of control that the teacher exercises over hierarchy, sequencing, pacing and pacing of instructional practice, then the greater the likelihood that any particular child will be able to realize the communicative competence held for specific subjects (discourses). On the basis of the data generated by this investigation, it would appear to be reasonable to assume that almost all the children in these schools are able to recognize different discourses produced by other children, but not all children are themselves able to realize these discourses.

Transfer Experiment

Introduction

One of the many problems raised by this research project relates to the nature of the changes brought about in a child who transfers from one school to another. The experiment using children as evaluators of other children's statements generated data that was indicative of the possession of recognition rules by almost all children in the sample and possession of realization rules as a factor of school organization. The question that arises then is as to the implications of change of school organizational form for individual pupils. During the course of the study one child did indeed transfer from Treliske County to Cadbury Hill.

A unique opportunity arose to observe the effects of this transfer in terms of the criteria used in the main study. The change from an institution constituted by weak values of classification and framing to one constituted by relatively strong values will involve the child in what amounts to a considerable cultural shift.

Without wishing to over-generalize from a limited case, it may be that studying such a transfer would have implications for research into the possibility of the reintegration of children with special educational needs from special schools to mainstream schools.

The case study offered here is, in a general sense, that of the effects of change of rules governing recognition and realization. The central issue is whether individuals acquire rules which in themselves negate the possibility of change. That is if a child acquires one set of

rules, does that delimit the possibility of perception of rules regulated by other forms? Once socialized into a way of being and seeing, can an individual remain accessible to other forms?

Conversely, if the coding is not stabilized into a code then the possibility of change remains.

In this case as the values of classification change, so must the nature of the recognition rules within the school. The question is as to whether the realization rules will switch as well.

This study examined whether the child could produce the legitimate message of the new context.

Subjects

The boy who transferred schools was matched by chronological and W.I.S.C. I.Q. profile with one boy in each school. The details are as below:-

NAME	D.O.B.	SCHOOL	CF	WISC		
				FULL	VERBAL	PERF
LD	16.4.71	CH	C++F+	78	73	86
CS	11.5.71	TC	C-F-	83	75	92
DB	19.8.71	Transfer		85	80	90

The I.Q. matches were clearly not exact. However, given the limited sample of children of the relevant age they were accepted as offering at least the same relationship between verbal and performance scores. That is, performance scores were higher than verbal scores.

Materials

The ten picture tasks employed in the main study were used in this experiment.

Procedure

The children were tested using the picture description tasks on four occasions. The first pair of administrations took place in May and June of 1985. DB transferred to Cadbury Hill after the Easter holiday. The first testing took place on the 16th of May, that is within four days of his arrival at the school.

Each of the pairs of testings was separated by three weeks. The second pair was separated from the first by six months.

Within each pair of testings each child described each task in both scientific and artistic contexts. This procedure produced two sets of paired responses, the pairs consisting of one response elicited in an art lesson and one in a mathematics/science lesson. These paired responses were then presented to each of two teacher evaluators. The teacher evaluators were drawn from the classes in Trelliske County and Cadbury Hill in which the children were taught.

As in the main study, the evaluators were asked the following questions when presented with each of the paired statements. It is to be emphasized that there was no signification of the context in which each of the statements was elicited. The procedure outlined above was described to the evaluators.

The teacher evaluators were asked the following questions:-

1. Can you tell the difference between these two statements?
If the answer to 1. was Yes, then:
2. Which statement do you think was made in a scientific/mathematical context and which was made in an artistic context?
3. How did you make this decision?

This evaluation process yielded the allocation of the categories Neither (not distinguishable), Correctly Judged or Incorrectly Judged to each of the statement pairs on the basis of two evaluators' judgements. For each child totals of each of the categories were calculated on each of the statement pairs over all the tasks. Kendall's coefficient of concordance was calculated for each child and each category.

The child who transferred schools was interviewed on two occasions, once on transfer and again six months later. Transcripts are given in Appendix 6.

Results

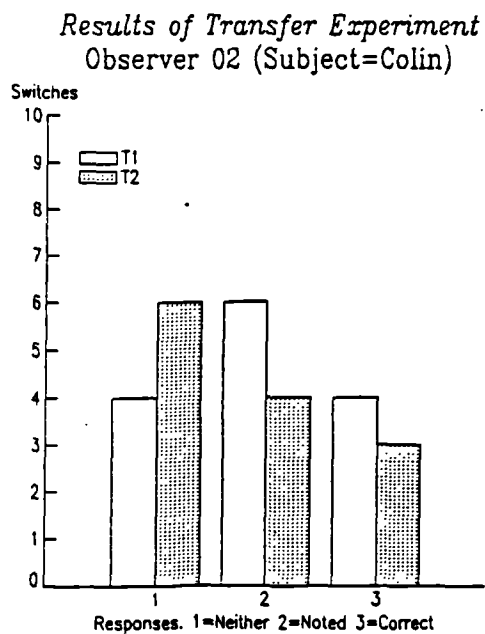
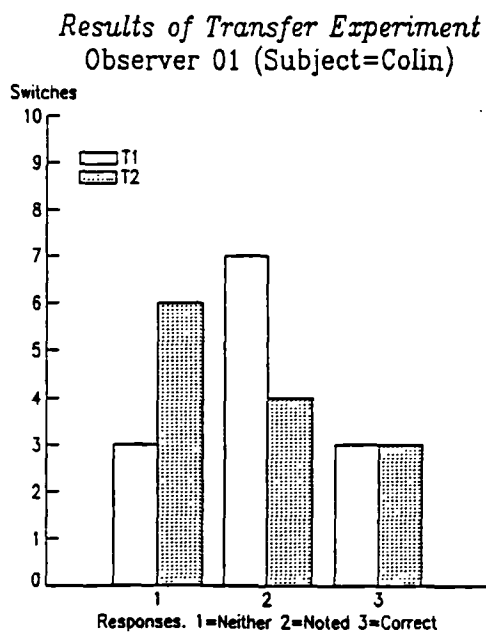
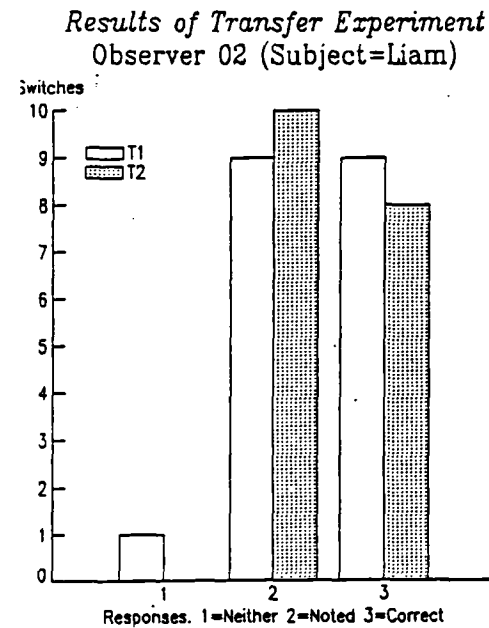
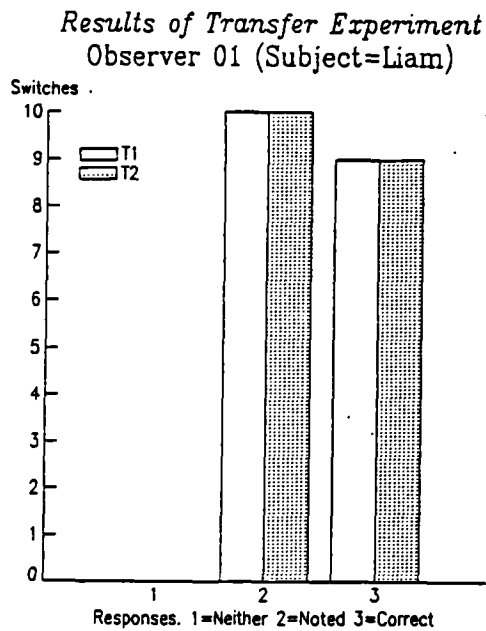
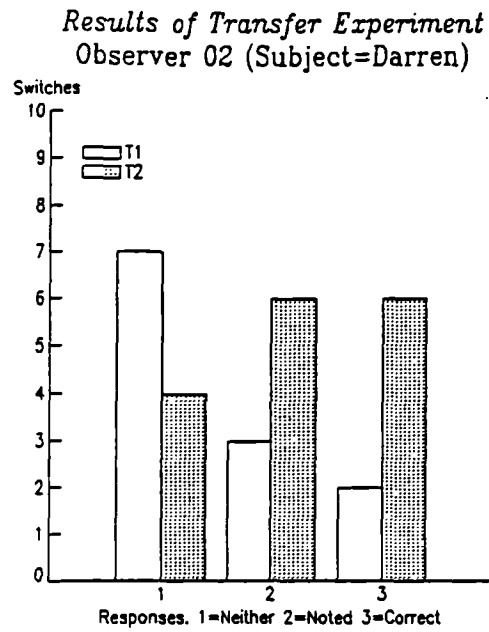
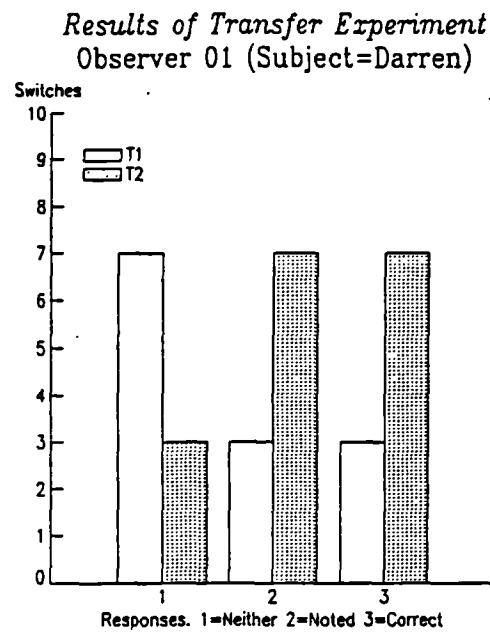
The results of the teacher evaluator categorization procedure were as follows.

		Neither		Noted		Correct	
Observer		01	02	01	02	01	02
Liam CH	T1	0	1	10	9	9	9
	T2	0	0	10	10	9	8
Darren TC->CH	T1	7	7	3	3	3	2
	T2	3	4	7	6	7	6
Colin TC	T1	3	4	7	6	3	4
	T2	6	6	4	4	3	3

T1/T2 are 6 months apart.

The results are illustrated in Figure 18.

Figure 18



Results for Kendall coefficient of concordance

This analysis was performed across times and observers on three variables:-

- A. Statements judged as neither scientific or artistic.
- B. Statements judged as being discernibly scientific or artistic.
- C. Statements judged as being scientific or artistic in accordance with contexts in which they were elicited.

Child	School	W	χ^2	SIG
LD	CH	.95	7.6	0.0224
CS	TC	.5	4.0	0.1353
DB	Transfer	.0192	0.1536	0.9260

When the data was considered solely in terms of whether the observers judge the statements correctly or incorrectly (included in incorrect here are the Indistinguishable/Neither figures), the following values are obtained when viewed in terms of a 2 sample (times) and 2 classes (correct/incorrect) contingency table.

Child	School	χ^2	Significance
Liam	CH	0.0	non
Colin	TC	0.0	non
Darren	Transfer	4.94	0.05

(DF = 1, P = 0.05 = 3.841)

The transcripts of the two interviews are presented in Appendix 8. These were read to DB following transcription and he was asked whether he would wish to change any of the information. He did not.

Discussion

The results of the teacher evaluations are by inspection and Kendall coefficient of concordance analysis indicative of stability of performance on the part of the control children and a marked change in performance by the child who transferred.

That there is consistency of performance as judged by the two observers on the part of the child in CH is beyond reasonable doubt and is statistically significant. The child who remained in TC shows constancy of performance on the number of correctly judged statements and agreement across observers. In the last analysis it is the number of correctly judged items which is of primary concern here and the data on this variable clearly shows constancy within schools and change with transfer.

The implications of these results are clear. It has been established in previous experiments that most children in these schools appear to possess the recognition rules of the subject criteria and, depending on the nature of the school, may or may not be able to realize these criteria.

It would appear from this data that DB had not acquired a code which delimited the possibility of perceiving a change in the demands of legitimacy of realization.

Inspection of the interview transcripts reveals that he is aware of the change in value of classification of the school, i.e.

"We move from teacher to teacher - so everyone knows and gets a bit of something different and it's quite exciting."

and "There is more things to choose here on your own board. There is more things every week."

"Different person - different teaching - something to look forward to ... different things to do make it more exciting ... there's different surroundings everywhere." Appendix 6

He also appears to be aware of a difference in the framing values of the schools, i.e.

"the kids used to say they wanted to do it and we would - someone said they wanted to do cooking or gardening in the morning so they could do it, so the teacher let them - so they used to get off work." Appendix 6.

This surely implies that the child is aware of a change in the principles of control regulating the sequencing and pacing of the instructional discourse. Interestingly he has also alluded to the control of the regulative discourse of the two schools, where in CH "the teachers were quite good in controlling" and "they're more strict get things organized and send them to Mr -- (The Deputy Head)".

The child appears to be saying that there is a clear disciplinary structure in the school with explicit guidelines for the children and explicit responsibilities for discipline tied to one person - the Deputy Headteacher. Whereas in TC the child is not aware of the Headteacher having a "helper" (presumably a deputy) to "get" the

children "frightened"; rather the Headteacher is seen as somebody concerned with making a "nice world" which is continually being "messed up". The child was aware that the school wanted the children to be "nice" but did not structure itself so that deviants were frightened into being "nice".

The implicit personal appeal for order emanating from the Headteacher in TC was clearly contrasting with the explicit, structured discipline of CH.

The child was also clearly pleased to be presented with explicit guidelines for attacking complex tasks. The phonic approach to reading at CH was praised.

"I've learnt how to blend words"

"doing all blending the words so you get them all right".

This is sharply contrasted with a Look and Say whole word method used in his former class at TC.

"At TC they didn't do that they just used to say - 'what does that say - not like /b/ /a/ /t/'".

This child appears to have a degree of insight into the relative values of classification and framing at both the instructional and regulative levels of pedagogic discourse of the two schools. He would also appear to be sensitive to changes in theory of instruction.

The child does not appear to have acquired the rules of acquisition in TC and thus when he becomes aware of differences in the dimensions of power and changes in modes of control he can change the realization of what now counts as the valid message of a new order of discourse.

However, whilst he was in TC the boy appeared to realize the local criteria of competence. Reference to Bernstein's general thesis would suggest that it is reasonable to suppose that for most working class children (this boy was from group IV) the family socialization is into strong values of classification and framing, or in that direction. This basic ordering principle would then be consonant with the strong classification and framing of CH.

Study of Wall Display

Introduction

The empirical investigations previously reported have been concerned with the semiotic mediation to children of the principles regulating their schooling. The sign system focussed upon was that of speech. Whilst it is clear within the theoretical models sketched by both Vygotsky and Bernstein that this system of signs assumes a position of some considerable importance, they both allow for a more general semiotic view. The experiment to be described here examined an aspect of the semiotic mediation of classroom organization - through the display of children's works of art.

To have a "nice bright classroom with lots of good display work" is one of the commonly held indicators of good teaching practice. Not only is display work important to parents but also to children. Children like having their work displayed on the wall. This very public way in which a teacher shows approval of a child's activity is highly valued. By putting works of art on the wall the teacher is telling the child that he/she approves of it and at the same time is offering a model of good practice to the rest of the class. This, of course, is one of the reasons why children feel so proud when their work is displayed, their friends are being offered their work as a model. The way in which work is selected for display and indeed the way in which the display is arranged is effectively an act of publicity of the teacher's desired model of good practice. Such publicizing activities have focussed the attention of theorists in the fields of Art and Education.

"Publicity is the culture of the consumer society. It propagates through images that society's belief in itself."
John Berger(1972) p.139

In different schools (or cultures) actions and objects signify different meanings. Indeed at a very general level it is possible to conceive of cultures or schools as worlds of signs and signs about signs, Hawkes (1977). In a sense adapting to cultural change is a process of adapting to changing systems of signification. For a child, particularly a child who finds learning difficult, moving from home to school is itself an act of cultural change and for some, entails culture shock. That which is taken to signify competence in one culture may signify incompetence in another or irrelevance in a third. How then does a school transmit to children the criteria which are taken to signify appropriate learning? What are the cues offered to children in their attempts to read the signs of schooling? It is argued here that art displays are part of the system of signs that constitute the culture of schools, that through these acts of publicity the principles which regulate the curriculum are realised.

Bernstein's analysis of educational knowledge is to be used here to describe the differing forms of curriculum structure offered within these two schools. As Atkinson argues when discussing how the notion of code may be identified in a range of different cultural domains:-

"In all contexts of application Bernstein's codes regulate the selection and combination of cultural elements into permitted arrangements."
Atkinson(1985).

This study focusses on the relation between codes that regulate the arrangement of a schools curriculum and the arrangement of that school's wall displays.

The question is therefore raised as to whether the principle of boundary maintenance realised at the level of the school curriculum is also realised in the structure of the school's display work. For this reason TC and CH were used as study schools.

Here then we have two schools structured in very different ways: one in which there are a variety of highly structured subjects where the child has little choice over what it will learn, the other where a broad, integrated thematic approach is taken within which children and teachers are relatively autonomous in their actions. These two approaches approximate to the "collection" and "integrated" types identified by Bernstein (1977): one in which things must be put together and the other where things are kept apart.

When illustrating the differing nature of the criteria which the child is supposed to acquire in different teaching situations, reference is made to the teaching of art. In what is termed the visible pedagogy which is associated with the collection type of curriculum with its strong classification and framing the following example is given:

"What are the children doing? They are making facsimiles of the outside. They are learning a reproductive aesthetic code. They may be drawing or painting figures, houses, etc. The teacher looks at the product of one child and says, 'That's a very good house, but where is the chimney?', or 'There are no windows in your house,' or 'That man has got only three fingers', etc. Here the child is made aware of what is missing in the production and what is missing is made explicit and specific, and subject to finely graded assessment."

Whereas with the invisible pedagogy in the integrated type curriculum realised through weak classification and framing:-

"The children have a large sheet of paper, and not a small box of paints but an assembly of media whereby their unique visual imagination may be momentarily revealed. This is allegedly not a reproductive aesthetic code, but a productive aesthetic code."

The teacher here is less likely to say, 'What's that?'; is less likely explicitly to create in the child a consciousness of what is missing in the product: the teacher is more likely to do this indirectly, in a context of general, diffuse support. Where the transmission realises implicit criteria, it is as if the acquirer is the source of the criteria."

Bernstein (1977) p.119

These statements come very close to describing the practices of the two schools used in this study.

Gearhart and Newman (1980) argued that, for the nursery school children they studied, learning the social organization of a classroom and learning its curriculum could not be distinguished.

"What children know about drawing is intimately tied to what they understand of drawing activities undertaken in a particular social context."

Gearhart and Newman (1980) p.183

They discussed the importance of the way the teacher spoke to the children about their drawings and also drew attention to the particular form of pedagogy in the classroom.

"..drawing was also being learned from the teacher's efforts to teach the organizational independence of individual production tasks. Reflexively, this individual task organization was being learned from the teacher's efforts to teach independently planful drawing."

Gearhart and Newman (1980) p.183

Whilst Gearhart and Newman's study is of interest, it failed to undertake the comparative work needed to show ways learning to draw differs under different forms of classroom social organization. Also, following as it does an explicitly Vygotskian experimental approach, it lacks the potential for describing and analyzing the social organization of the classroom in structural terms. In its failure to do this it confines interpretation to a very local domain. Equipped with the detail of the principles regulating classroom practice available in Bernstein's model, a comparative study aimed at producing data of more general interpretive value is anticipated. Through focussing on wall display rather than

pupil-teacher and teacher-pupil verbal communications, a wider perspective on semiotic mediation is being drawn.

It is important to note that the photographs that are to be discussed here are representative of each school's display work. All the work displayed at one time in both schools was recorded and selected examples are presented. The selection was made by the teachers of the classes of 9-12 year old children in each school. That is the (two) teachers in each school were shown the entire sample of photographs for their school and asked to select the three that best represented the school's display work. Equally important is the fact that all the teachers responsible for this display work viewed their efforts as the result of a "common sense" approach to the task. They did not regard themselves as having been instructed or coerced to work in this way nor did they regard their work as potentially different in form from display work in any other school. These photographs are those displayed in Figures 19, 20, 21, 22, 23 and 24.

Discussion

What then is revealed by an inspection of a sample of the display work in these schools? The control over what is expected is clearly high in displays A,B and C. In A the faces all have the same structure - they are all the same shape! In B the faces of the flowers are structurally similar. The faces were all yellow, all on the same plates, all with red lips and all had eyebrows. The levels of similarity in C are so marked that they require no comment.

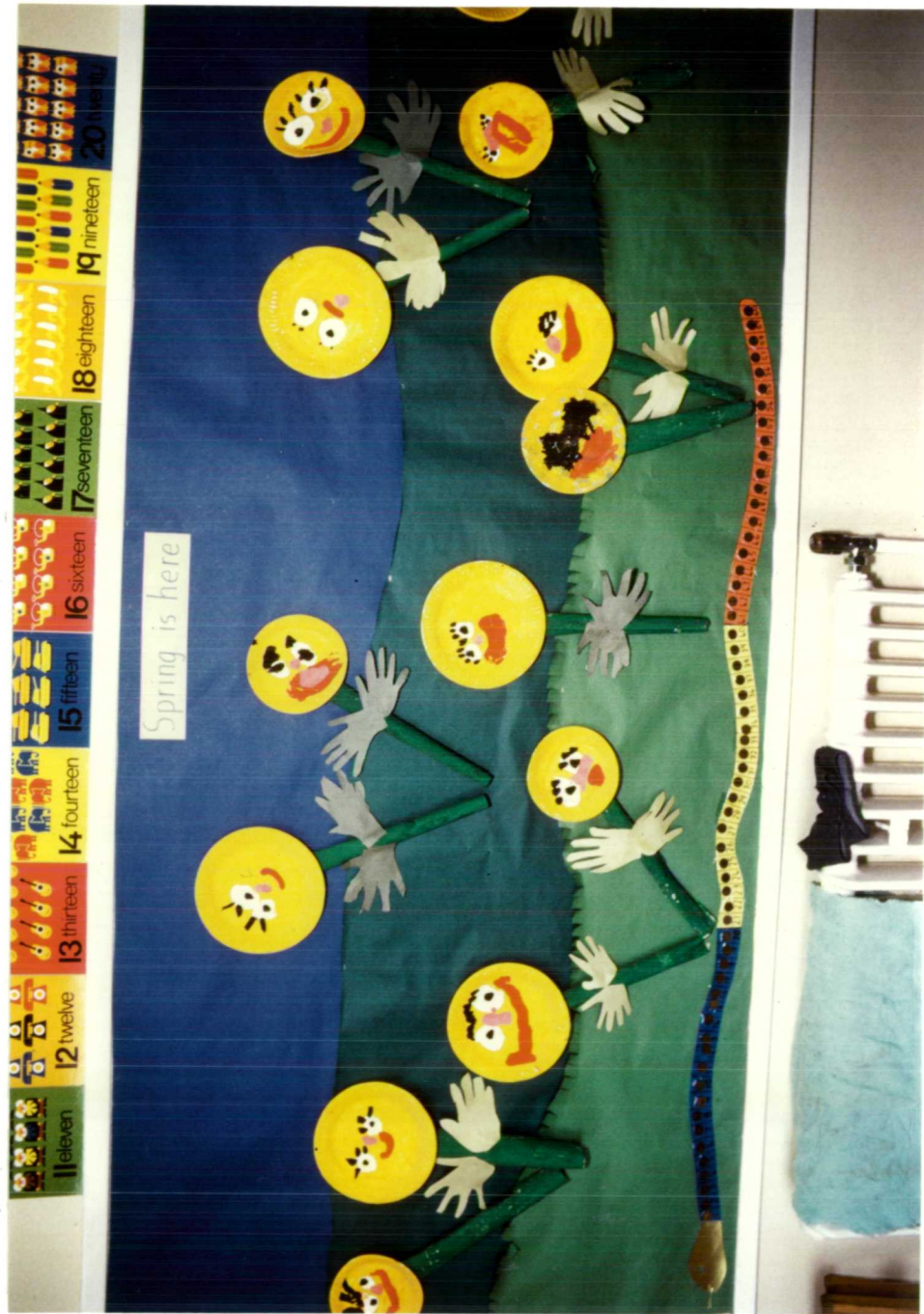
Whereas the control over what is taught/expected is of a very different nature in D, E and F. In D there is an integrating theme of transport

Figure 19

Picture A from school CH



Figure 20 **Picture B from school CH**



Picture C from school CH

Figure 21



Figure 22 Picture D from school TC



Figure 23
Picture E from school TC



Figure 24 **Picture F from school TC**



and yet children have produced different illustrations relating to the central theme. Thus there are air balloons, buses, cars, planes, bikes and an ambulance. These are drawn, crayoned or painted using a variety of techniques. In E and F there are no underlying themes and the work is very varied in terms of the techniques used and the content portrayed. It seems there are at least two principles at this level of control which distinguish the schools. In one school there is a high degree of control over what is to be portrayed and also over the techniques and materials to be used. In the other school, the level of control over these factors is much lower.

It is perhaps worth considering the relation of the conceptual foci of two of these displays.

The concept underlying display C is that of letter recognition and this is explicitly noted in the labelling. The implicit concept underlying D is of a different order - transport.

It may be that this reveals different theories of curriculum sequencing. On the one hand a "top down" strategy is revealed in the integrated approach of the theme transport and on the other hand a "bottom up" strategy that of a phonic approach to the teaching of reading is implied. This is reminiscent of a familiar debate. Displays A,B and C appear to be in accord with the strategic principle advocated by Gagné who argued that children cannot understand complex ideas before they have mastered the notions which are more conceptually primitive, Gagné (1985). Whereas displays D, E and F appear to reveal the strategy accorded to Bruner who argued that children will not understand and remember "simple" ideas until they recognise the framework into which they fit.

Each school appears to some extent to have a characteristic style of structuring the displays. Whereas in A and B the pictures are arranged in straight lines with regular spacings between pictures, in D, E and F the pictures are closely grouped in irregular patterns. It is perhaps not entirely coincidental that in picture D that the work displayed was produced by children in the age range 5-14 where each display in the other school was produced by one age group only. These two factors perhaps reveal underlying levels of classification. On the one hand, ages and individuals are grouped and on the other separated by clearly marked boundaries. It is in this way, possible to argue that the principles on which the curriculum is organised are realised in the way work is displayed. Yet this analysis is from the point of view of a detached adult, the question remains as to what the children perceive in these situations.

Interviews with groups of children

The children in the two schools were interviewed using a technique derived from personal construct Analysis. Bannister and Fransella (1984). Three groups of three children ranging in age from 9-12 years in each of the two schools were interviewed. Each group was told that the photographs were from two schools and then asked to group them. This they all did correctly, that is they grouped the photographs on the basis of the school of origin. The groups were then shown photographs in groups of three and asked to say what was the same about the two photographs from one school and different about the photograph from the other school. It should be emphasized that this corruption of the personal construct technique will only generate indicators of group perceptions. The constructs are grouped together on the basis of their similarity irrespective of the actual combination of eliciting elements (photographs). These construct groups (1 - 8) are presented below.

Construct Group 1

Pictures from

CH	TC	School
Names	No Names	CH
Put Names of people on that did it and a title	Didn't	CH children from
Names on	Not	CH
Names with signs	Un-named	CH

Construct Group 2

Pictures from

CH	TC	SCHOOL
Stuffs pointed out in this one. Tells you what its about by writing	More difficult to work out	CH
Titled	Not titled	CH children from
Put names of people that did it and a title	Didn't	CH
Names with signs	Haven't	CH
Based on something A founding for their project	Variety	CH

Construct Group 3

Pictures from

ABC	DEF	School
They're mounted in straight lines	All muddled up	TC
All spaced out	All close together	TC children from
Higher level The way they're spaced out and drawn it looks like a bigger school	Lower level	TC

Construct Group 4

CH	TC	School
Teachers tell you what to do - it's easier	You do what you want it's harder	TC
Given that to do	Use imagination	TC children from
Painting what teachers see	Painting what you see	C

Construct Group 5

Pictures from

CH	TC	SCHOOL
All doing the same things in the same room	All doing different things in the same room	TC

Construct Group 6

Pictures from

CH	TC	SCHOOL
Just pictures	Lots of things in it books and pictures	TC
Just pictures	Books, months of the year with pictures	CH children from
Just pictures	Dates of months and pictures and books	CH
Just pictures	Drawings and paintings Towel, writing on the side, months	CH

Construct Group 7

Pictures from

CH	TC	SCHOOL
Just faces	Different pictures	CH
Less variety	More variety	CH
Faces, puppets	Engineering things Things you travel on	CH
Faces	All sorts of things	CH children from
They're all the same	They're all different things	TC
All one thing	All kinds of vehicles	TC
All the same picture drawn by different people all put together	All different pictures all over the walls	TC

Construct Group 8

Pictures from

CH	TC	SCHOOL
All made the same way	They're all made different ways	TC
All made the same way	Made in different ways	TC children from
Painting	Pencil drawing and	CH
Normal painting	Collage	CH

In answer to the question "Which class would you rather be in and why?" the children gave the following replies :-

Children in CH

1. Choose TC

Better more interesting 'cos all about travelling places to go.

2. Choose TC

They do more older things - more grown up.

3. Confused

CH had "lovely pictures" which "might get boring" and TC are "lovely".

Children in TC

1. Choose TC

The choice shows what you think, your parents think you can express yourself instead of relying on a teacher. You can think of something your own self.

2. A debate between two children.

A In this one you do everything you want - it's like getting spoilt. (pointing to TC)

If you go out to work and say I'm not going to do that you get thrown out.

B You shouldn't go for the job then - this one helps you choose the right job for you. (also pointing to TC)

A But this one would tell you things about jobs - but if you're naughty you won't get a job. (pointing to CH)

Discussion

It appears that the wall displays examined here act as relays of the fundamental regulatory principles that govern the schools at least as viewed by adults. More surprising is the implication that children are sensitive to the messages relayed by these displays and that their teachers are not aware of their part in this transmission process. The fact that these children are described as having moderate learning difficulties further implies that either this transmission process is very strong or operates through an unimpaired channel.

There is also a school effect in terms of attributes perceived by the children. Children from both schools noted differences in variety of content, technique and medium (construct groups 5,6,7). Children from school CH seemed to be more sensitive to variation in degree of attention paid to labelling work produced by individual children and entitling of group themes (construct groups 1 and 2). Children from school TC seemed to be aware of the spatial arrangement of the display and the pedagogy employed in the classroom (construct groups 3,4 and 7).

In the interviews children from school CH made their choice of school on the basis of the pictures produced whereas the underlying social relations of the classroom were noted more in school TC. Whilst rigorous methodological scrutiny may well cast doubts on the finer details of some of this data it is, perhaps, worth exploring these issues in a little more detail.

In school CH subjects are clearly marked, the criteria of evaluation are explicit and these are transmitted within a highly structured scheme. All the children recognise these points. However children in school CH do appear to pay particular attention to the labelling of their work, the purpose of that work and they chose a school on the basis of the pictures themselves. That is, they were concerned with their identity in relation to pre-ordained goals and saw the products of schooling as being of paramount importance.

The displays relay to these children the general principles of strong classification and framing of their school and reveal a focus on individual identity through performance. Whereas in school TC with its integrated day approach and the pedagogy designed to facilitate the acquisition of understanding, the children also recognise the same general points. However they pay particular attention to the pedagogy employed and relationships between children's work. The teacher pupil relationship and pupil pupil relations are paid more attention by these children situated as they are in a school of low values of classification and framing. Their school choice is also more concerned with the underlying social principles of the school, i.e. children from TC referred to the ability of children to think for themselves and of the dangers of being spoilt and/or naughty. Thus emphasis here, was on

self and/or moral regulation. Whereas the children from CH chose their school on the basis of the performances produced in the schools i.e. "lovely pictures", "do more older things" and "more interesting 'cos all about travelling places". One school concentrates on the outcomes of schooling in terms of required performances and the other on the contexts in which children will develop. It appears that the children schooled to perform, attend to performances and children schooled through immersion in contexts attend to the social and moral nature of those contexts and their consequences.

In summary, all the children appear to be able to read many of the signs from these displays. Children in a structured school were concerned with individual identity in relation to performance whereas in the other school the children emphasised principles of social relation. The teachers in these schools were surprised to note what their pupils could say about display work which up until that point the school had considered to be natural.

The work of Vygotsky rests on the assumption that in order to understand the individual one must first understand the social relations in which the individual exists. The evidence presented here accords with the Vygotskian view of the social origin of higher mental functions. The school environments were specified in terms of what is ultimately their social nature. It has been demonstrated that the principles that regulate these environments are relayed through the wall displays in these schools. The different aesthetic principles of the schools in question are contained within very different institutions. It is not the purpose of this study to say whether one set of aesthetic principles is better than another, rather to

demonstrate the transmission of these and other social constructs.

Children, even those with learning difficulties, are perhaps much more astute at reading the signs of, what are in the last analysis social phenomena, than we have previously considered. Schools say things to children in a variety of ways, we understand but few of them.

There is a clear need to develop systems of enquiry that enable clarification of the implications of placing children in particular school environments. Whilst we have legislation that demands that special educational provision be formulated in terms of childrens' needs we do not appear to be in a position to consider what it is about schools that children perceive as being important or different. On entering schools children have to very quickly learn 'what goes here.' If they fail to do this, for whatever reason, they can become marginalised in a variety of ways. If we are to take seriously any attempt to enable as many children as possible to have access to mainstream school we need to understand the infinitely subtle mechanisms by which schools send messages to children.

The Study of Marking

Introduction

The study of the child who changed schools enabled an examination of the implications of different forms of school organization for change and stability in specific recognition and realization rules. Attention was directed in this investigation towards the implications of different forms of classroom organization and teacher behaviour within a school.

During the course of the fieldwork for the main study it was noticed that one of the teachers in school TC was engaged in a form of classroom practice which differed markedly from that of his colleagues and also from the overall practice of the school.

At the senior level of this school two parallel classes of boys were being taught in what appeared to be very different ways.

It was also of interest that, due to an organisational oddity, each teacher had taught the other's class in the previous academic year. This study was conducted in the second half of the Autumn term - each class had thus been taught exclusively by the other teacher only four months before the study was conducted. The children had only been taught by their present teacher for nine weeks.

Thus within one school the children in these two classes had transferred from one form of classroom organization to another.

When reference is made to the school descriptions it may be seen that in TC, both at the horizontal ($\bar{C} \quad \bar{F}$) and vertical ($\bar{C} \quad \bar{F}$) levels of teacher organization, the values of classification and framing are at their weakest.

The theory of instruction operating within a classroom crucially affects the form and nature of educational practice within that situation.

Treliske County has, according to the school descriptions, the greatest potential for variation in pedagogic practice between classrooms within one school. The weaker the control (F), the greater the possibility of individual teacher activity. However, a situation could arise in a situation of weak principles of control over teacher action where the official school theory of instruction is only partially represented in the actual classroom theory of instruction as practised by the teacher.

Tomlinson highlights the need for further examination of the social/psychological aspects of teaching children with special needs:

"At the heart of a sociological analysis of special education must lie a consideration of the special school curriculum. For it is here that beliefs that the special needs of children are being met can be tested, clarified and appraised by an examination of what teachers and pupils actually do in special schools and classes."

Tomlinson, S. (1982).

Recent studies on linguistic interaction between severely mentally handicapped children and their teachers have focussed on teacher-pupil interaction, Harris (1984) and Davidson (1984), the main emphasis being on the form of interaction and the content transmitted in that interaction.

Whilst analysis of the effects of what counts as valid content in a setting is of great importance, it does not in itself provide a complete description of the classroom in which the child is placed.

An attempt was made here to examine some of the elements of education transmission within special education which have as yet received scant

attention. The process of evaluation operates at many different levels within classrooms and it is on one of these levels, that of the marking of scripts, that attention is now directed.

The phenomena to be analyzed and observed here are the tacit values and attitudes concerning appropriate pupil behaviour which every pupil must learn if she/he is to be successful at school: values concerning what is appropriate educational knowledge and what are appropriate responses to teachers' questions and so on which are transmitted to pupils but are rarely transmitted explicitly in the content of what teachers say, Stubbs (1976).

This then requires the researcher to consider the interaction and negotiations in social situations through which people reciprocally define expectation about appropriate behaviour. It is in the course of these interactions that definitions arise as to what counts as achievement and intelligence.

Hammersley studied the way in which teachers imposed certain aspects of order on classroom interaction. A school was analysed in terms of the "cultural competence" it defines as being of value in the assessment of children. The pupils were judged as being "bright" or "stupid" through reference to the rules of "classroom competence" specific to that classroom, Hammersley (1974). For children the key to the rules of their classroom is through the evaluation they receive of their performance. Clearly, it is important to investigate the appreciation of the principles of evaluation by children with Special Educational Needs and the way they put this into practice. For if these children fail to recognise the principles of evaluation in their classroom they will not

be able to adopt the relevant criteria, thus further disadvantaging themselves in terms of the teacher's evaluation of their capacity. As Tomlinson stated: "In much of special education, the hidden curriculum of normal schools becomes the curriculum of special schools"

Tomlinson S. (1982).

It is crucial that we understand the principles which regulate the social rules which govern and direct the use of social categories such as "good worker", "lazy" or "stupid".

Barnes et al (1971) examined patterns of communication in classrooms and considered how they provided children with expectations about how to interpret teachers' remarks and the more general experiences in the classroom. The analysis suggested that different approaches to teaching, indeed different value sets held by teachers, became relayed into part of the communicative life of the classroom and in that sense part of the curriculum.

Some of the effects of changing school have been noted above. That is the realization rules functioning at the classroom level were seen to be acquired by the boy who transferred from Treliske County to Cadbury Hill. The relation between these rules and the whole school level is complex. At one level the pedagogic practice/classroom context acts as an explicit relay of information: in certain situations there will be direct instruction. At another level the pedagogic practice/classroom context acts as a tacit relay of information through, as will be shown below, its organization and arrangement. However, the school structure and organization will also function in this way as a tacit relay.

Children's classroom experience is influenced by these and other levels

of transmission. Evidence was obtained that indicated that the boy was capable of realizing criteria which were directly related to classroom practice. It is at this point that this study departs from the work of symbolic interactionism. Rather than arguing that the social interactions of participants define situations an attempt is to be made to examine the influence of institutional and social structures on interactions. Clearly the systems of meanings that arise in social interaction are of importance. However, it is vital that the researcher does not neglect the investigation of the way in which structural issues constrain the actions of the individuals engaged in social interaction.

This study examined the way in which the texts that children had produced were marked in these two classrooms and also considered the implications for the pupils of these two forms of practice. The decision was made to examine not only the marking behaviour of the teachers but also of the pupils. The question of interest was as to whether the children in these two schools had acquired the evaluative criteria of their teachers in the short period of time that they had been taught by them.

The Pupils

The 27 children were all male day pupils at Treliske County. Their ages were in the range 14.0 to 16.2 and their measured IQ scores were in the range 51 to 78 (WISC full score). These children were taught only by their respective teachers, that is, each class was taught by the one teacher for all subjects for an academic year.

Method of describing the two Classrooms

The terms "skills in isolation" and "skills in context or growth model" were used by Diamond to describe the professional perspectives of the subjects in an examination of Teachers' views of writing and their pupils' performance, Diamond (1983). Whilst the study itself indicates interesting possibilities for further investigation of the relationship between the stated intention of teachers and their classroom action, the terms of description are not sufficiently developed for the present purpose in that they lack a clarity of definition.

Barnes and Shemilt (1982) provide the necessary clarity in their study of teachers' attitudes to writing in schools. They categorised secondary school teachers' responses to questions about the setting of written tasks to pupils. The results were factor analysed and were shown to suggest a pattern of attitudes which they refer to as "Transmission" and "Interpretation". The writers attempt to make explicit the views held by secondary teachers about classroom communication and its functions. They make the important point that these views tend to be intuitive and inexplicit. Their work is an attempt to make the implicit, explicit. The suggestion here is one of fundamental importance. What appears to be "common sense" practice to the teacher often implies affiliation to a particular set of beliefs/paradigm. If they themselves are not aware of the principles guiding their own practice then the children's ability to react to changing criteria of evaluation becomes all the more remarkable. The terms Transmission and Interpretation are an attempt to make the intuitive become obvious, at least to the researcher.

The description of these terms bears close relation to the dichotomies of child-centred/content-centred conceptions of teaching and reflexive/received conception of knowledge, Eggleston J, (1977). In essence these descriptions all refer to what Durkheim (1938) called the paradox of education in which it can serve both as a social constraint acting as a conscious effort to impose on pupils' ways of seeing, feeling and behaving and as a means of developing personal autonomy and self determination.

The concern here is to investigate whether the practice of a teacher with respect to what is valid educational practice in form, content and control is transmitted to the children in their classes. Whilst the descriptions offered by Barnes and Shemilt may not in themselves provide a complete and adequate theoretical description of the phenomena under scrutiny, they are accepted as sufficient for the purpose of this study in which they will provide a frame of reference. The following statements are those provided by Barnes and Shemilt:-

The Transmission teacher:-

1. believes knowledge to exist in the form of public disciplines which include content and criteria of performance;
2. values the learner's performances insofar as they conform to the criteria of the discipline;
3. Perceives the teacher's task to be the evaluation and correction of the learner's performance, according to criteria of which he is the guardian;
4. perceives the learner as an uninformed acolyte for whom access to knowledge will be difficult since he must qualify himself through tests of approach performance.

Whereas

The Interpretation Teacher:-

1. believes knowledge to exist in the knower's ability to organise thought and action;
2. values the learner's commitment to interpreting reality, so that criteria arise as much from the learner as from the teacher;
3. perceives the teacher's task to be the setting up of a dialogue in which the learner can reshape his knowledge through interaction with others;
4. perceives the learner as already possessing systematic and relevant knowledge and the means of reshaping that knowledge, Barnes and Shemilt (1982).

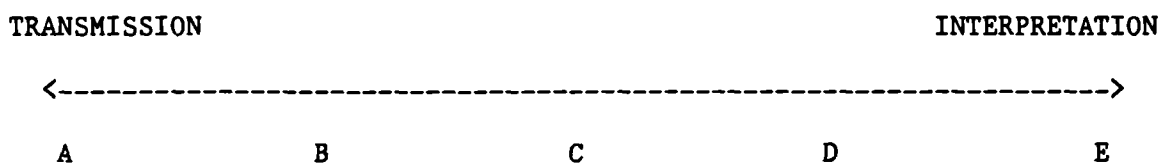
The terms were selected for use in this part of the project because of the need to elicit from teachers their own perceptions of their practice. It was felt, perhaps wrongly, that the notions of classification and framing would not be as accessible to them as those of Transmission and Interpretation. Both teachers proclaimed themselves to be anti-academic and not interested in theory.

The terms Transmission and Interpretation are in essence alternative descriptions relating to the Social and Discursive rules of the classroom. They focus on the control over these rules and are thus directly related to the notion of framing on a broad front. In a sense they lack the delicacy of framing in that these descriptions have combined strong values of framing for both social and discursive rules in Transmission and weaker values for both in Interpretation. They impose a correlation on two aspects of discourse which are not necessarily complementary in their organization.

These do however represent crude approximations of the classrooms concerned, they are expressed in terms familiar to the teacher and they can be decoded into the parlance of the rest of the project.

The Procedure

The teachers were asked to place themselves on a scale related to the descriptions provided by Barnes and Shemilt.



On a Monday morning each teacher asked his class to write about the previous weekend.

The texts were collected by the teachers who chose a representative example of writing from each class. The texts were then reproduced (including all errors). Teachers were then asked to give out the texts to their classes and simply say "would you mark these pieces of work, please". The children were provided with appropriate materials (a red and black pen, a pencil and a ruler). No information was given as to how to mark or what system to use. The teachers were asked to mark the work themselves at the same time. The work, when marked, was collated and scored for accuracy of spelling and punctuation corrections.

Results

Inspection of the marked papers revealed a difference in the level of comments made by the children and their physical method of marking. Examples are given in Figures 25, 26, 27, 28, 29 and 30.

My Weekend

On Saturday I got up at 4.0 clock and I went down the Stairs and had some breakfast then I had a telephone call at 9.0 clock from David Blacker and he said "do you want to come and find Timothy address?" so I said o.k. Then David said "I will be there in half an hour." whilst I was waiting for David to come over. I help^d my brother to do his car, whilst I was waiting for David. When David got to my house ~~and~~ we went of to find Timothy's address. We ^{found} ~~found~~ his address and went out to London and ~~drove~~ ^{drove} ~~around~~ ^{around}. ~~we spent~~ ^{we spent} the rest of the week end in David's car.

Stairs.	1.	2.	3.
found.	1.	2.	3.
spent	1.	2.	3.
drove	1.	2.	3.
around.	1.	2.	3.

Write out again.

My Weekend

On Saturday I got up at 4.0 clock and I went down the stairs and hand some breakfast then I had a telephone call at 9.0 clock from David Blacker and he said do you want to come and find Timothy address so I said o.k then David said I will be there in half an hour whilst I was waiting for David to come over. I help my brother to do his car whilst I was waiting for David then David got to my house and we went of to find Timothy addrees we fond his address and went out to homer and drok brun and Spet the rest of the week end in David car.

My Weekend

On Saturday I got up at 4.0 clock and I went down the stairs and had some breakfast then I had a telephone call at 9.0 clock from David Blacker and he said do you want to come and find Timothy address so I said o.k then David said I will be there in half an hour whilst I was waiting for David to come over. I help my brother to do his car whilst I was waiting for David then David got to my house and we went of to find Timothy address we found his address and went out to London and drove down and spent the rest of the week end in David car.

My Weekend

On Saturday I got up at 4.0 clock
 and I went boun the Stavis and hand
 Som_ breakfast. then I had a telephone
 call at 9.0 cloak from David Blacker
 and he said do you want to come and find
 Timothys address. so I said o.k. then David
 said I will be thay in half an hour. whilst
 I was wanting for David to come over ^{*} I help
 my brother to do his car. ~~whilst I was~~
~~wanting for David.~~ then David got to my
 house and we went of to find Timothy
 addrees. we fond his address and went
 aut to london and drok boun and
 Spet the rest of the week end in
 David car.

What a weekend!

Please spell 'more carefully'!

How long were you in Davids car?

Try to write shorter sentences.

Figure 29

My Weekend

On Saturday I got up at 4.0 clock
and I went ^{down} ~~down~~ the ^{stairs} ~~stairs~~ and had
^{SOME} ~~SOME~~ breakfast then I had a telephone
call at 9.0 ^{CLOCK} ~~clock~~ from David Blacker
and he said do you want to come and find
^{Timothy's} ~~Timothy's~~ address so I said o.k then David
said I will be ^{there} ~~there~~ in half an hour whilst
I was ^{waiting} ~~waiting~~ for David to come over. I help
my brother to do his car whilst I was
^{waiting} ~~waiting~~ for David then David got to my
house and we went of to find ^{Timothy's} ~~Timothy's~~
^{address} ~~addresses~~ we ^{found} ~~found~~ his address and ^{went} ~~went~~.
^{out} ~~out~~ to London and ^{broke} ~~took~~ ^{down} ~~down~~ and
^{Spent} ~~Spent~~ the rest of the week end in
^{David's} ~~David's~~ Car.

Not Good

please see Me

My Weekend

On Saturday I got up at 4.0 clock
 and I went ^{down} the ^{stairs} and ^{had} some
 breakfast then I had a telephone
 call at 9.0 clock from David Blacker
 and he ^{said} do you want to come and find
^{Timothy's} ~~Timothy's~~ address so I said o.k then David
 said I will be ^{there} in half an hour whilst
 I was ^{waiting} for David to come over. I help
 my brother to do his car whilst I was
^{waiting} for David then David got to my
 house and we went of to find ^{Timothy's}
^{address} ~~addresses~~ we ^{found} his address and ^{went}
^{out} ~~out~~ to ^{London} and ^{broke} ^{down} and
^{Spent} ~~Spet~~ the rest of the week end in
^{David's} ~~David~~ car.

Alful terrible
Spelling Mistakes

The teachers graded themselves at B and D positions on the scale derived from Barnes and Shemilt descriptions.

Spelling Corrections

TABLE 1

Group Y's piece of work

The results of the children's "corrections" were analyzed. The figures given below are of the percentage of each class who had detected an error in the spelling of the words listed.

WORD	GROUP X	GROUP Y
DOWN	69	100
STAIRS	53	42
HAD	61	85
GONE	84	85
THEN	-	-
THEY	23	28
WAITING	15	28
HELPED	7	-
WHILE	38	28
WAITING	23	0
DAVID	7	0
TIMOTHYS	7	42
WE	7	42
FOUND	38	42
OUT	23	0
DROVE	46	42

TABLE 2

Group Y's piece of work

The results of the children's corrections are shown below:

WORD	GROUP X	GROUP Y
SATURDAY	100	92
SHOPPING	85	42
SHOE	100	25
BURNT	28	71
RUBBISH	42	-
WENT	42	42
FERRET	28	64
BITE	85	78
BROUGHT	42	42
LISTENED	-	42

The marking behaviour of the two class groups was of the same order with respect to their accuracy as regards spelling mistakes. These figures are based on the number of attempts made at correcting words irrespective of whether these corrections were accurate.

As noted above, this study is not concerned with relative efficiency of the classroom practices. Attention here is directed to how the evaluation was presented rather than the particular errors detected.

A group was marginally more accurate when marking work from within its own number. This is to be expected given that the use of language in the two groups will be slightly different dependent in the projects and themes followed by those classes.

The main differences in the two groups very closely reflected the marking behaviours of their respective teachers irrespective of the piece of work being marked.

These differences were with respect to:

1. Physical methods of marking
2. The nature of the comments passed on the work
3. The style of corrective guidance

These differences will be observed on inspection of Figures 3 to 8.

1. Physical methods of marking

Teacher and taught in group X marked exclusively in red, either circling, underlining or crossing out.

See Figures 25, 26 and 27.

Teacher and taught in group Y did not use red pens although they were available to them.

See Figures 28, 29 and 30.

2. The nature of comments passed on the work

Teacher X did not comment on the content (in terms of quality of information given) of his pupils' work. The children in group X did not pass comment on the work at all when marking. All Teacher X's comments were instruction. SEE FIGURES 25, 26 and 27.

Teacher Y passed comment on the content of the stories (i.e. What a weekend!) as well as being instructional. Most (all but one) of group Y passed comments on the work. These were usually trivial (i.e. good or not good) but in some cases evaluative and instructional ("not good, please see me", "Good" followed by a list of spelling mistakes, "Good story, but bad spelling", "Good but bad spelling"). SEE FIGURES 28, 29 and 30. The ratio of supportive to critical comments written by Group Y was 2:1.

3. The style of corrective guidance

Teacher Y did not put marks all over the page. SEE FIGURE 28. He marked, presumably, important words wrong and gave correct spellings. Teacher Y has since explained that he will only mark a spelling mistake if:

- a) he considers the spelling to be within the developmental capability of the child.
- b) The word is of social importance.

Teacher X marked everything wrong that was so, with instructions as to how many times to write out corrections.

Teacher Y involved the child's story in his comments i.e. "How long were you in David's car?" (SEE FIGURE 28) taking the child's story, trying to comment on its importance and extend the child's knowledge through it.

Teacher X was marking for overall accuracy of spelling and syntax with little attention to the child's contribution in terms of what he was

trying to say about his weekend. This is perhaps best illustrated by the correction of:

"drok bown"

by Teacher X as "drove around" whereas the child was intending to communicate:

"broke down"

and failing to do so by reversing the "b" and "d". (SEE FIGURE 25).

Teacher X clearly was not attending to the meaning of the child's communication, merely its form. Whereas Teacher Y was attending to the form and content of the communication and also using the child's content as part of the teacher's instructive medium.

There appears to be agreement between the following levels of description of the teachers' attitude sets.

1. The teacher's own self evaluation on the Barnes and Shemilt scale
2. The teacher's own practice of evaluation
3. The realisation of this practice on the part of the children.

This would suggest that the children in each class had received and used messages concerning their own teacher's attitude to writing.

It can be seen from the data ~~in this study that the evaluative criteria~~ held by two teachers were indeed transmitted to the children in their classes. Moreover this process appears to be reasonably efficient and rapid.

The children in this study had recently changed teacher and thus evaluatory regime and yet had realised the criteria of the new order within a fairly short space of time.

Children who in many respects are seen as slow learning appear to be reasonably sensitive to at least some educational messages which are transmitted to them by their schools.

It is argued here that we should set about finding out exactly what it is that children are learning from their special schooling, not only in terms of what counts as valid content but also pedagogy and evaluation. This study has indicated that children can realise the criteria of evaluation by which their ability is judged. The performances elicited by these evaluative criteria count as the relevant behaviours in the classroom.

If children with Special Educational Needs are sufficiently aware of their teachers' criteria of evaluation to respond to them, then it calls into focus the nature of these criteria. Perhaps these criteria should be the centre of far greater attention in teaching. If we were more aware of all of our demands we would be in a better position to evaluate the demands themselves.

It may well be that teachers, through their general classroom practice, are implicitly transmitting evaluative criteria to which they would not necessarily subscribe.

Summary of Empirical Work

Following a lengthy series of procedural modifications, the major experimental phase of the study produced data which detailed teachers' evaluations of children's utterances. These utterances were elicited in two instructional contexts and were evaluated in terms of their supposed context of elicitation. The results from this procedure indicated that there was a relation between the principles of classification and framing that regulated the pedagogic practice of the school and the children's ability to realize the criteria of instructional context specific text held by their teachers.

Further examination of the data revealed a similar relation between the amount the children actually said and the principles of regulation operating within the schools. However, when asked to evaluate utterances produced by their peers, even children who fared badly in terms of their teacher's evaluations of their own speech appeared to be able reliably to recognize text as having been elicited in specific contexts, at least to the same extent as their teachers. Thus almost all the children could recognize the origin of the data if it indeed was recognizable as being instructional context specific.

A child transferred from a school where he and his peers were judged as poor at realizing specific criteria of instructional contexts to one in which the children were judged as being comparatively proficient. Over the study period of six months his judged ability to produce distinguishable context-specific text increased markedly whilst the control groups in both schools remained constant. The implication being strongly that either the ability was learned in one school and not in another, or that the child already possessed the discrimination but saw

that it was not relevant to the class pedagogic practice in TC and realized the discrimination when it was relevant in CH.

A variety of normative measures of the populations of children were then taken and the results confirmed the initial impression that the children in the schools did not significantly differ on measures of IQ, social class and expressive language ability. The abilities being studied were not therefore attributable to individual differences between children, but rather to differences across schools.

The process of educational transmission characterized in terms of principles of classification and framing was studied from two further perspectives. Evidence had been accrued that the verbal behaviour of the children was a function of these principles; this was in a sense the end result of a process of cultural transmission. The two additional studies probed aspects of this process and provided indications as to the breadth of its functioning.

The relaying of information relating to the structural nature of the classroom practice of the teachers in the schools was studied through observing children's reactions to different approaches to marking children's work on the one hand, and methods of displaying art work on the other. These observations confirmed the general impression gained of schools structured by generative principles themselves acting as agents of cultural reproduction in the transmission of these principles.

CHAPTER 6

CONCLUSION

This chapter will commence by considering the extent to which the hypotheses generated by the model of description were confirmed by the empirical studies. In doing so it will review what may be seen as the 'natural history' of the experiments. The evolution of the experimental methods will be discussed in terms of the difficulties encountered in measuring variables related to the model.

A distinction will be drawn between the general theoretical implications of the thesis and those with specific implications for the practice of special education. An analysis of the strengths and weaknesses of the thesis will lead to a discussion as to how the work may be extended. It will therefore serve a synoptic function, both making explicit the contribution of the theoretical influences on the thesis and indicating areas of development.

A. The extent to which the hypotheses derived from the model were confirmed

1. Realization Rules

The major focus of the experimental work was on the relation between school and classroom organization and pupils' ability to realize criteria of communicative competence generated by specific discourses in schools displaying variation in organizational form. The sample was thus of possible forms of organization, not of all schools.

Confirmation of the effects of the differential coding of school and classroom organization was gained from the three investigations undertaken. Despite the methodological difficulties encountered, the underlying trend in the data was in accord with codings of schools (in terms of classification and framing) allocated on the basis of a coding grid and observation and interview.

Where values of classification and framing were strong at both levels of school subject and classroom instructional practice the children realized the criteria of communicative competence expected by their teachers both with respect to marking and to discrimination between subjects to a greater extent than when values of classification and framing were weak. In the language of the thesis, the inferred realization rules appear to have been acquired by children in accord with the classification and framing values of each school.

In the pilot study children were presented with a fixed set of lexical descriptors and asked to select those most appropriate to a particular instructional context. In effect the children were asked to articulate criteria at the level of appropriate lexis. The children had great difficulty in doing this. Indeed, it is perhaps remarkable that the data revealed a trend that suggested support for the hypotheses. The emphasis in the pilot study on a level of explicit reference to realization rules was also present in the first modification of the experimental method, where teachers assigned children's statements to the categories Art, Science/Mathematics or Neither when presented with single statements. When this task was given to teachers they also experienced similar difficulties to the children.

Rather than the children describing objects in terms of classified descriptors, teachers classified children's descriptions of pictures. Both methods implicitly required individuals to make reference to a rule or set of rules that had been tacitly acquired. This proved difficult for both teachers and children. That both investigations generated data that lent general support to the descriptions attests to the ability of both groups to infer rules from their own performances. When teachers were asked to state the reasons why they had categorized statements in specific ways they referred to specific words. These words or combinations of words, through either their imputed poetic quality or through the items to which they referred, were those performances which the teachers considered to index scientific or artistic statements.

The experience of the dissatisfaction with early work prompted a re-examination of the research question. Interest shifted to the ability of children to articulate sentences which conformed to the teachers' criteria of competence in the respective subjects. Subjects entered into different relations with each other in different schools. The research question asked whether such subject insulations would influence the communicative competence of pupils. As it was degree of insulation between school discourses which was coded in the descriptions of schools, then differences between the performances of each child within each discourse was taken as a valid dependent variable. It was expected that the stronger the framing of the pedagogic practice, the more likely the pupils would be to acquire the criteria of competence expected by the teacher. This competence is acquired through many channels. However, it is clear that one of the main agents of control is the teacher. Thus teachers were asked to

differentiate between children's statements made within different discourses. This method produced data that confirmed the hypotheses. There was, however, an age effect. Although not significant, there was a definite trend in the data towards increasing discrimination between statements with age. However weak the school subject classification, the older children were more competent as judged by teachers. The stronger the value of framing of the teacher's pedagogic practice, the more marked was this increase in competence with age. However, the only significant ($p = <0.05$) increase with age was in CH with its strong values of framing at junior age ($F++$). The degree of difference between schools falls with age. See Footnote 1.

In general, although classification of subjects tends to weaken, it was seen that pupils' discrimination tends to improve. Major changes in the organization of the school occur essentially in the last two years of the pupils' schooling.

As these changes of organizational form are only in effect for the last two years of the children's schooling, a decrease in this ability may have been predicted. The data for children in different stages in their schooling suggests that, once acquired, discriminations are not easily lost. Alternatively, this acquisition process could be, in part, the effect of non-school media, i.e. adolescent interests - popular music and fashion (arts) - science fiction/technology (science/maths).

Footnote 1.

It is interesting to note that there is some degree of compatibility here with the ILEA Junior School Study ILEA (1986) which indicated that junior schools are more influential on pupil progress than senior schools.

The trend to change pedagogic practice with increasing age of pupils in the study schools signifies a factor of more general interest.

Atkinson argues that "work experience", "work preparation" or "leavers' courses", in that they attempt to focus directly on the demands of life after school, tend to involve weakening of values of classification.

"The introduction of such curricula is often based upon weak classification - as one might expect. There is a weak boundary between educational work or experience; likewise, internal classification is weak and curricula are not sharply delimited."
Atkinson (1985) p.169

The relationship between education and production was the topic of Moore's (1984) doctoral thesis. Moore explores changes in the degree of relative autonomy of education from production in the latter stages of secondary education. From this perspective he examines changes in both curriculum and pedagogy at secondary level. He cites the development of Mode 3 at GCE and CSE as an example of a move towards a more interpersonal pedagogy. Moore argues that changes in the social composition of school populations, as more working class pupils stay on beyond 16, have led to the development of classroom control problems and that the interpersonal pedagogy is a response to these changes.

The weakening of values of framing in CH, WH and A may arguably be examples of this phenomenon. The move towards a social education leavers' programme is, if anything, a more complex issue in special than in mainstream education.

Many of the children who are referred to the MLD and ESN(M) schools are those who have themselves rejected mainstream schooling, Gulliford (1985). Not only does the population of these schools contain children whose measured IQ is low, but also those whose behaviour in the widest

sense is seen as a problem by teachers. Moore argues that, within mainstream schools, the accommodation of challenges to authority is managed by a retreat from traditional forms of authority and school work.

"The social education philosophy - its vision of the community and model of the pupil - provides an ideological mechanism for defining the situation in such a way that the integrity of the educational paradigm is preserved. By generalising the pupils' behaviour, their resentment at being at school and their scepticism regarding its authority, into a basic lack of competence, adjustment or maturity, it becomes possible to view their behaviour as symptomatic of the pupils' 'need' rather than as a specific response to school itself. Pupils can be accommodated for as long as they can be seen as 'in need'. The resilience of the educational paradigm lies in its ability to discover needs in pupils - in this case, the need to learn how to 'cope'. This particular need is self-confirming - the very response to the frustration of having to remain in school leads to patterns of behaviour which are treated as evidence of lack of maturity etc."

Moore (1983) pp.373-4

This study has considered some of the changes within special schools, forms of schooling which in themselves constitute a response to behaviour which has been counted as a problem. The description of social education provided by Moore echoes much of the practice of TC, particularly at secondary level. An important difference between the practice of the four special schools studied here and the practices analyzed by Moore is that the children in this study have already been "managed by the educational system". By being placed in a special school they have already been positioned in relation to school knowledge. Responses within special education must then be considered in this light.

2. Recognition Rules

It has been inferred that the childrens' discriminations were an index of acquired realization rules. In that realization rules presuppose recognition rules, it would be logical to assume that a child who could realize the expected communicative competences could also recognize statements belonging to the respective subjects. The main study confirmed this. It did not, however, yield any information about those children who did not show the expected competences. The question as to whether these children possessed recognition rules of the subjects (discourses) was answered by experimental examination of the children's ability to discriminate between other children's statements. The data suggested strongly that all but the very lowest ability (as measured by W.I.S.C(R)) possessed appropriate recognition rules irrespective of whether they possessed the realization rules. Here then was some evidence that all children, irrespective of school type, possessed appropriate recognition rules. This suggestion was strengthened by the study of the boy who changed school. This boy, who transferred from a regime of weak values of classification and framing to a regime of strong values, showed a marked increase in judged ability to discriminate between discourses. This child acquired the realization rules on transfer. It would seem that he possessed the recognition rules whilst in TC although the type of pedagogic practice did not facilitate the acquisition of realization rules or their display. These realization rules, however, were acquired rapidly or displayed (within 6 months) when the pedagogic practice took the form of strong values of classification and framing.

This series of experiments produced a considerable body of data all of which supported the hypothesized relation between school type and pupil

competence. The methods used were refined through continuous reference to the model. The two initial attempts at measuring discriminations were unsatisfactory primarily because the experimental contexts were not valid representations of the model. It was only when the experimental contexts fully met the requirements of the model that a method for comparing performances was obtained.

3. Measures of Pupils' Language Ability

It was considered that differences found could possibly be attributed to individual differences in language ability. Although the evidence from the study of the pupils who transferred from one school to another suggested that this was not the case, it was decided to conduct a series of measures of aspects of pupils' language ability. Through an analysis of selected measures of expressive language ability, the possibility that the data merely revealed differences in within-child factors was discounted.

4. Length of Statements

The number of words spoken by children at junior age appeared to be strongly associated with their relative values of classification and framing of each school. This was particularly so for the occasion on which the children described the pictures. When required to speak within the respective discourses, the children who had acquired the realization rules said more than children who had not acquired these rules. This difference remained even when children became familiar with the task and when the senior, and perhaps less forthcoming group, were considered. The investigation did not provide enough information for the fall in overall length of statement with age to be attributed to some general developmental factor or to some relationship with the overall weakening of values of classification and framing with age.

The issue remains, however, that more speech might well have been expected in a school such as TC (C F) where communication is the primary relay of control and there is greater (personal) negotiation between teacher and taught. The children in TC may have said less because they found the task difficult. That is, they did not normally make the kind of discriminations required and found it difficult to speak the language of the specialized discourse. They may well have been unused to being asked the kind of question that required discursive rather than social reflexiveness. Yet the children from TC produced more speech in response to the question "which class would you rather be in and why?" when looking at the photographs of wall display (n = 24 in CH and n = 89 in TC, n = number of words spoken).

There were strong positive and highly significant correlations of number of correctly judged discriminations by teachers and the length of statements. These associations were strongest on the first of the two presentations of the task. In that there were no significant correlations of correct judgement and length of statement with any of the within-child measures (IQ, ITPA, NSST), the suggestion is that the performances measured by these experiments revealed abilities which had been acquired interactively rather than developed on the basis of innate characteristics. The exact nature of this interactive acquisition remains elusive.

The teachers shared common recognition rules for subjects. This was evidenced by the high degree of inter-observer reliability noted in the main study. This finding also suggests a degree of agreement about what counts as subject specific talk, even when such talk is not used in their pedagogic practice. None of the teachers involved in the

research possessed professional qualifications in Science, Mathematics and Art. The entire cohort of teachers comprised two Bachelor of Education (Primary) graduates, five Certificate of Education (Primary) holders and one Certificate of Education (Secondary, Physical Education) holder. This thesis then has been concerned with what may be a "layman's" version of what counts as Art, Science and Mathematics as transmitted by teachers who had not been socialized into the professional discourses from which the school subjects are derived. It is possible that professionals might not make the same discriminations.

Thus children and teachers demonstrated their tacit knowledge of the recognition rules of specific school subjects. Teachers from different schools showed similar rules. Yet children in different schools do not uniformly realize texts based upon these rules.

5. External Framing and Pupil Competence

At one level it is possible to argue that if children can recognize but not realize criteria of communicative competence then it is the framing which is ineffective. However, this analysis may not be sufficient in this case. Inspection of the school descriptions reveals that TC with its characteristic $\begin{smallmatrix} \text{--} & \text{--} \\ C & F \end{smallmatrix}$ values reveals strong values of external framing $\begin{smallmatrix} \text{e} & \text{++} \\ F & \end{smallmatrix}$. The school defines its field of educational operation with little or no reference to outside agencies.

On entering the school, children are entering a symbolic system insulated, to an extent, from their non-school experience.

The nature of this relatively closed system may have implications for both children and teachers. Children may well be able to recognize scientific and artistic texts because of their out-of-school

experience. They may have acquired the recognition rules of specific subjects through the media, for example. Teachers have acquired these rules through their own experience of schooling and teacher training, not necessarily as scientists, mathematicians or artists.

When both teachers and children enter a school with strong values of external framing they enter an environment where much of what counts as knowledge in the non-school environment has reduced legitimacy. At one level teachers, and perhaps to a lesser extent children, are required to suspend the recognition rules of the local pedagogic practice of the family/community in order to enter into the pedagogic practice of the school. Both parties may have to learn what to suspend when entering into the school. The teacher when newly appointed and the child when becoming a pupil both have to acquire the rules of what counts as legitimate inside the school.

The external values of framing, whether strong or weak, differently facilitates the aims of the school. Inspection of the values of external framing for the four schools reveals a range of positions in this respect. Where TC denies links outside the school, CH and WH, in different ways, encourage them. TC defines its practice with little reference to external constraints whereas CH refers to mainstream schools and other agencies when defining its field of operation. Thus the recognition rules of the non-school environment may be permissible in CH but may not in TC. This does not mean that children do not possess these rules in TC, rather that they are tacitly required to suspend them. Children have to realize different communicative competences in the different schools, although they may enter school with shared competences and recognition rules of specific academic discourses.

Equally, teachers become socialized into a form of pedagogic practice which to differing degrees permits the transmission of recognition and realization rules previously acquired by them. The extent to which particular teachers do not wish to conform to the expected pedagogic practice is a complex issue. It will be shown in the investigation of the marking of written work that weak framing over teachers can allow such a possibility.

6. Schools as systems of signs

a. Wall Display

The major experimental activity of this thesis was concerned with a study of use of speech, and the analysis of the results was in terms of the structural principles of regulation of this behaviour. There is evidence, however, from the studies of wall display and teachers' marking that there are other aspects of schooling which act as relays of structural information. The system of marks and written comments that teachers made on children's written work was shown to act as relays of pedagogic orientation. The arrangements through the production, selection and combination of children's painting was also shown to act as a relay of the deep structure of the pedagogic practice of particular schools, although as far as the teachers were concerned, they were simply mounting wall displays rather than using wall displays explicitly as relays of the focus of their practice.

The teachers replied to the question "How do you know how to put together wall displays like this?" in the following ways:-

"You just do it - there's no theory - you simply put what the children produce on the wall."

"Obviously it's got to be neat but everyone does it like this."

"You look for theory in everything - .."

"They showed me how to mount pictures in college - I just mount the work and put it up."

"I just do it."

However, it is possible that the question may not have oriented the teacher towards the focus required. It is possible that different questions would have elicited different answers, e.g.

"How is it that the children paint in this way?"

"Why do you think these children's paintings are so similar?"

"In what ways are the paintings similar?"

It does appear from the responses given that the practice of schooling involves a range of what may be seen as complex routines and rituals.

Gearhart and Newman (1980) argue in respect of art work that learning the social organization of a classroom and learning its curriculum cannot be distinguished.

"What children know about drawing is intimately tied to what they understand of drawing activities undertaken in a particular social context."

Gearhart and Newman (1980) p.183

Whereas these authors do not articulate what they mean by "social context", this thesis has attempted to relate the organizational variables to individual behaviour.

Following the directions given by activity psychology it would seem profitable to investigate the meaning of wall displays for children as a step in the process of understanding what counts as important in particular schools. In the investigation of wall display it is important to remember that the children also produced the pictures and

thus were socialized by that activity. The products of these socializing activities are then selected, combined and organized by the teacher in a way which celebrates and announces the expected competences required of a particular school and/or classroom. Rather than reading backwards from statistics describing the outputs of schooling (Rutter et al, 1979), it would seem worthwhile to consider what is relayed to children by particular activities.

From this perspective schools may be considered as generators of a specialized semiotic. The meaning of these signs for the participants in the practice of schooling then becomes the object of study. The study of wall displays indicated that children from different schools "saw" different meanings in the same displays. They were oriented towards different sets of recognition and realization rules.

When the children were asked to comment on selected children's paintings, the children in CH referred to the importance of the individual producer of the painting. These remarks about the labelling of individual children's work, and of the overall class task, were not echoed by children in TC. Further, the children in CH talked about the school in terms of classrooms where the best pictures were produced, whereas in TC the children talked about whether the children in the class could choose what they wanted to do, and paint in the way they wanted to paint rather than the way the teacher wanted. "This school teaches you how to choose." These children distinguished between classrooms on the basis of pedagogic relations within classrooms. Contrasts were drawn between classrooms where "you paint what you see" and "you paint what the teacher sees". That is, between classrooms with strong and weak values of framing. Whereas children in CH talked

about the individual producer of the painting, children in TC talked about the social relations of production of the pictures. The children were presented with the same stimuli but they realized different meanings. It would appear to be inadequate to talk about "good wall display" independent of a type of pedagogic practice. What is important is what a display relays to children about the practice of the schooling of which they are the subjects.

In the light of the formulation, discussed in Chapter 4, that instructional discourse is embedded in regulative discourse, it is argued that this investigation of wall display has revealed different degrees of embedding. In CH the dominating discourse appears to be that of instruction. Whereas instructional discourse in TC is so deeply embedded in regulative discourse that aspects of this discourse appear to predominate in children's views of school practice. In that the children in the two schools also employed similar distinctions between displays, it was seen that the degree of embedding of discourses resulted in differing degrees of emphasis.

Another issue here is, perhaps, that children in CH were oriented by the logic of transmission of the pedagogic practice, whereas the children in TC were oriented by the logic of an acquisition process in which instruction and regulation are embedded. The children in TC may have seen the underlying pedagogic principles embodied in these pictures.

It suggests that they had learned an orientation to general concepts rather than local particular descriptions. If this is true, and there is insufficient evidence for this to be proven here, the implications

for questions of transfer of training may be important. Clearly this issue requires further investigation.

7. Marking Inquiry

It will also be remembered that the investigation of teachers' marking behaviour revealed that written signs also relay information about pedagogic practice. Children were seen to evaluate and mark their peers' work using criteria that appeared to have been transmitted by their teachers' own marking behaviour.

The pupils of the teacher who evaluated children's work at the level of spelling and syntax, marked their peers' work in the same way and passed no comments on the work. The pupils of the teacher who evaluated children's work at the level of spelling, syntax and meaning, marked their peers' work in terms of spelling and passed comments on the quality of the work. The transmission of different criteria of evaluation through this marking behaviour revealed that children had acquired different understandings of instructional practice in specific instructional contexts.

The two teachers involved in this study will be described in terms of the form of their classroom practice. Whereas teacher X tended towards strong values of classification and framing, the other, teacher Y, tended towards weaker values of both. The tendencies, revealed in the marking, are, of course, only part of the overall influences on the children's experience of the classroom. It is important to note that in the main study concerned with discrimination between subjects (discourses), teacher Y was responsible for the senior children and a teacher with similar orientation was responsible for the junior children. The school

(TC), with its weak values of framing over teachers, allows for the possibility of this variation between the practice of individual teachers. Care was taken in the main study to ensure that the practice of the individual teachers conformed with the official practice of the school. It was fortuitous that the teachers of the classes (junior and senior) did in fact conform to the overall school practice. If this had not been the case, an extra level of description would have been required within the overall model.

The investigation of the implications of different forms of wall display revealed that the wall displays that children see are metonyms for different forms of pedagogic practice. Whereas the major effect of the marking behaviour was to orient children to different instructional practices, the wall displays relayed information with respect to the degree of embedding of instructional discourse in regulative discourse. The children in TC were oriented more towards the regulative discourse (the controls on social relations), the children in CH towards instructional discourse. As most of the research activity in this thesis was primarily designed to measure aspects of instructional discourse, there are important issues raised by this finding in terms of the general research method. This will be discussed below.

It would appear that there is much to be gained from treating acts of communication other than those of speech as sign systems which may act as relays of the structural principles regulating specific forms of practice. This would further ^{the} evaluation of schooling from a perspective which retains "ecological validity", Bronfenbrenner, (1977).

B. Strengths and Weaknesses of the Thesis

The major strength of the thesis is that it has provided a body of evidence that strongly suggests a relation between the macro structure of school organization and the micro practices of individual pupils. In doing so it has demonstrated the value of the model in terms of the descriptions it enabled and the relations it posited. Through the analysis of the principles governing the organizational practice of institutions, the model predicts the principles governing the production of texts. In order to move from the model to distinguishing between schools, coding rules had to be set up and applied. This thesis, within the limits imposed by the methods, has confirmed these predictions.

As noted in Chapter 5, many of the critics of Bernstein's overall model, (notably Easthope et al (1976), Gibson (1977) and Pring (1975)) have claimed that it is inflexible and incapable of generating predictions at sufficiently precise levels of definition. This thesis has demonstrated the value of the theoretical model for generating predictions which were open to empirical testing. The flexibility of the overall model allowed the generation of the level of definition of description used in the empirical investigations. Not only did this allow for the coding of different aspects of instructional practice, but also for the drawing of a distinction between the framing of instructional and regulative practice. Cooper's (1976) failure to attend to this issue, in part, resulted in his misplaced criticism of the overall model.

The results obtained in this thesis must be interpreted with considerable caution. Firstly, evidence was only obtained for the pupils' powers of discrimination on one set of pedagogic productions.

A study of a greater range of both similar and different texts would be necessary if the findings were to be generalized. However, the evidence presented here is highly suggestive of general mechanisms.

In that the major focus of the tasks used was to measure the behaviour of the children in the context of instructional practice, the thesis is limited in its view of the pedagogic practice of the schools. It was shown that the children in TC had greater difficulty in realizing specific criteria of competence with respect to instructional practice than their peers in CH, WH and, to a lesser extent, A. If the children in TC are not being "taught" (in the widest sense) to realize these criteria, two questions arise: firstly, does this matter? and secondly, what else is being taught?

The question as to whether it matters that children acquire these realization rules can only be answered with respect to the intentions of special schooling. If the special school intends to integrate its pupils into mainstream schools then it does matter. The investigation of the behaviour of the child who transferred from TC to CH indicates that children can realize rules when placed in a context which encourages this realization. However, this process will take time and if reference is made to the chapter describing psychological characteristics of children with learning difficulties it will be seen that speed of learning and breadth of transfer are important factors. In this respect the delay involved in acquiring and/or using the realization rules may constitute an added disadvantage for the child attempting to integrate into a school where the realization of these criteria is taken as an indicator of competence. At a more general level, and perhaps more importantly, scientific and artistic discourses

involve different concepts of evaluation, different criteria of relevance and different forms of argumentation. Bruner has recently re-examined Nelson Goodman's beliefs on this subject.

"The difference for him is not that the arts are "subjective" and science "objective". Rather, each constructs its world differently, and objectivity versus subjectivity is not the distinction at issue.

What is at issue, he proposes, is the difference in the constructional activities of the various arts and sciences, and particularly differences in the use of what he calls "symbol systems". ... he develops the proposition that 'much of knowing, acting and understanding in the arts, sciences and life in general involves the use - the interpretation, application, invention, revision - of symbol systems' ".
Bruner (1986) p.101

Active participation in these different discourses may then have implications for the cognitive development of the individual. This hypothesis requires empirical testing.

Secondly, this thesis has only hinted at what else may be transmitted in TC. The work on wall displays alludes to the function of the regulative discourse and yet the thesis has not generated measures of these functions, except in the case of observational studies of positional/ personal forms of teachers' control.

Allied to this problem is the issue of how children acquire specific rules. The thesis has shown that more children acquire specific realization rules in specific curriculum areas in some schools than others but not why some do and others do not acquire them within any one school. This general question as to how the rules which generate texts are differentially acquired awaits investigation. The suggestion offered by this thesis is that this process of acquisition may well follow the same pattern of acquisition as other sociolinguistic rules, i.e. they are inferred from the surface structure of the text. In this respect

it is important to consider what it is that leads a child to select one rule rather than another and the effect of awareness of the criteria upon their acquirer. These questions are not answered by this thesis.

Thirdly, a general weakness of the model as it exists at present, is that it does not explain variation in levels of performance.

The main focus of attention here has been on variation in competences across schools. However, the model cannot deal with discriminations between what count as good and bad performances. There is no method for investigating what counts as a good performance and what it is about a performance (statement) that makes it better than another within a particular instructional practice. The model, then, requires to be developed so that it can produce descriptions of what counts as good and bad performances.

A part answer may be found in the data generated when teachers were asked why and how they found it possible to discriminate between statements. However, even if these features could have been formulated as rules, these would have been minimal rules. Such rules would be unlikely to be capable of discerning what counts, not so much as a well formed statement, but a best formed statement.

Another variable which is not fully accounted for is the effectiveness of individual teachers. The question as to how committed teachers are to the school's official pedagogic practice constitutes a potential problem for the interpretation of the results. The experiment on teachers' marking behaviour was conducted in TC where there was a weak value of framing governing teacher behaviour. Here one of the

teacher's orientation was at variance to that of the school. One teacher held values of weak framing (F-) which was in general accord with the official practice of the school, but the other teacher held values of strong framing (F+) which represents a contradiction to the overall school practice. This degree of variance in teacher behaviour is more likely to arise under weak framing over teacher practice. Clearly it was easier for a teacher in TC to develop an idiosyncratic classroom practice (indeed at some levels this was encouraged) than in CH where the delivery of the official school practice was independent of teacher personality.

Weak values of framing and weak values of classification is a school model of classroom practice which Bernstein (1985) suggests is potentially difficult to maintain. Stability in this form of practice has to be achieved essentially through personalized relations between staff and between staff and pupils.

This was confirmed through the statement made by the Headmaster of TC: "When a teacher is away, even for a day, the whole system breaks down. The children become lost when their teacher is absent". This statement can be compared to that made by the Headmaster of CH where the stability emanates from the structure of the curriculum: "It doesn't matter if a teacher is away or leaves, the system provides the continuity for the children. Like an army regiment it is, and should be, personnel independent". It would seem that commitment of the teacher may be relatively less important in schools like CH than in schools like TC.

However, even within a school organization as tightly controlled as CH there must be variation between teachers and this factor was not accounted for in the experimental designs. The stability of outcomes across ages suggests that this may not have been a major omission. It is important to note that classroom codings were made on the basis of data gathered in the classrooms of the pupils studied and thus the codings apply to their teachers.

The use of the analysis of variance model must also be considered a weakness. By treating the factor "school" as an independent variable the assumption of unidimensionality was made. Clearly the general model on which the descriptions were based is multidimensional. This reduction in dimensions of description must be seen as a source of weakness.

The general model allowed distinctions to be drawn between the exemplar schools. The delicacy of the model of description, which itself is open to further refinement, requires tools of analysis which are more appropriate.

C. General Implications

The review sections of this thesis have argued that psychological understanding of learning difficulty may be enhanced by adopting a post-Vygotskian perspective. However, it was also argued that this perspective fails to generate an articulate description of the social and ecological context of schooling. The thesis has demonstrated that different theories of instruction generate different criteria of competence. It has also indicated that the exact nature of these

criteria remains elusive. Whilst there are implications for the current practice of special education, these may best be discussed after the theoretical model has been refined in the light of the findings of this thesis.

The relationships between theory of instruction, school and classroom organization and form of curriculum modification imply some ideological framework. It is suggested here that there are ideologies of the special school child which lie behind the theories of instruction and thus inhere in the organization of the school and the curriculum. It is argued that it is through this ideology that the pupils become positioned in respect to the knowledge. The external values of framing with respect to employers and mainstream school refer to the ideology of the school, and are indicative of the ultimate positioning of the pupil in society. Weak values of external framing (CH) promote the integration of the pupil into later school and/or work, strong values (TC) in this study promote the moral competences which promote the socialization of the pupil into family and community. Thus children from TC are differently ideologically positioned. Their supposed fixed, inherited low level of general functioning is taken as part of the rationale for creating a form of schooling designed to socialize children into a state of moral/spiritual acceptance of diminished life expectations. An attempt will now be made to extend the model so that it can take into account differences between special schools in how they conceive of their ultimate purpose.

There is a variable degree of insulation between mainstream and special schooling. This appears to be a general case even after the implementation of the 1981 act. In a recent review of research, Peter

(1986) reports details of three DES-funded research projects related to the implementation of the 1981 Education Act.

"Despite the growing number of link schemes between special and mainstream schools Dr Seamus Hegarty, director of the NFER project, and his colleagues found that 33 per cent of the teachers in 268 special schools who responded to their questionnaire still had no regular contact with mainstream schools, nor did 38 per cent of the pupils in those schools. Most of the children who went in groups into ordinary schools (often children with severe learning difficulties) spent less than three hours a week there."
Peter (1986) p.137

Special education, by virtue of its degree of insulation from mainstream education, must be considered and analyzed from a perspective that accounts for this differentiation. It is argued here that special education is itself specially positioned within the educational field. It has been shown by Tomlinson (1981) that the degree of control over the practice of special education has until recently allowed the development of very diverse forms of practice. It is argued here that the act of placing a child outside the mainstream system and into special education has to an extent freed special educational practice from some of the constraints of mainstream schooling. Children who have been processed out of the mainstream system no longer constitute a control problem within that system. The regulation of special schools needs not be the same as in mainstream schools. The relationship between regulative discourse and instructional discourse within the practice of special education may then vary as a function of the aim of the school. These aims provide the deep structure of the regulative discourse of the school and as such may be seen as the ultimate intention of the school. From this perspective the analysis remains compatible with the views on Vygotskian and activity psychology discussed earlier in the thesis.

Wertsch, Minick and Arns (1984) note that the function of activity, as a unit of analysis in post-Vygotskian activity psychology, is to orient the subject in the world of objects.

"Activity is not a reaction or aggregate of reactions, but a system with its own structure, its own internal transformations and its own development."

Wertsch, Minick & Arns (1984) p.154

They proceed to argue, as has been shown in Chapter 2, that it is the "motives" of these activities that must be the focus of any analysis. The generative basis of these structures is made available for analysis through the descriptions afforded by the language and concepts of the model that have been utilized in this thesis. The positioning of children in special educational practices is then the intention of these practices.

Special schools do not all have the same aims. A model is required that will generate a description of the varieties of special educational practice as a consequence of difference in aims.

Special education (MLD) - a general model

It has been shown that different theories of instruction are associated with different forms of organization and these generate different criteria of communicative competence. Some forms of pedagogic practice are oriented towards non-school, or adult, life; other forms are oriented more towards mainstream school. Different forms of pedagogic practice focus to different extents on processes of acquisition and transmission of specific skills. These forms of practice tend to be associated with different aims or intentions.

In this thesis two poles of organizational structure emerged: firstly, where overall values of classification and framing for instructional discourse were strong, i.e. CH or WH; secondly, where overall values were weak, i.e. TC.

Where overall values were strong the curriculum modification was that of objectives-based teaching with a mainstream school view of content. Here the children acquired some of the criteria of communicative competence of the subjects of mainstream schooling. They were oriented towards the content rather than the social relations of their schooling. The children appeared to gain at least a part of their identity in school directly through their academic work. The intention of the school was that the children should achieve academic and vocational outcomes which held status in mainstream schools. The schools in different ways maintained communication with outside agencies.

The aim was that the special school pupils should be able to integrate into mainstream settings on the basis of the skills and knowledge learned in the special school (weak classification between schools). Through these competences the special school intended that they should become independent individuals. The social and the specific moral regulation of these children was not the explicit focus of control in the school. What were explicit were the principles of the instructional discourse and the evaluations to which they gave rise. In the process of acquisition the pupils acquired both a discipline and direction, i.e. towards mainstream school.

Conversely, where the instructional discourse of the special school (TC) was governed by weak values of classification and framing, an integrated day curriculum was delivered through a child-centred pedagogy. Here concern was with the social processes in which children were engaged during schooling. The children did not acquire criteria of specific communicative competence of the subjects of mainstream schooling to as great an extent as they did in CH. They were oriented towards social relations rather than the content of their education. The intention of the school was that the children should acquire the social skills and moral basis to withstand the rigours of an adult life that was inevitably going to be limited in its range of chances by the children's supposed innate intellectual deficits. The C-- F-- school had no intention of re-integrating its pupils into mainstream school and maintained only very tenuous links with outside agencies.

In TC there were strong boundaries between these special school pupils and the expectations and aspirations of their mainstream school peers. The aim was that these special school children should function happily in adulthood supported by the strong moral, social and, in the words of the headmaster, "spiritual" regulation they had acquired during their segregated education. At the ideological level, in that these children were considered to be permanently and innately deficient, a strong boundary existed between them and their peers, both during school and adult life. Their social behaviour in adult life was to be highly controlled through the inner regulation acquired in school.

The points made so far may be summarized as shown.

	TC	CH
Instructional Discourse	C-- F--	C++ F++
Pedagogy	Invisible pedagogy Logic of acquisition predominates	Visible pedagogy Logic of transmission predominates
Model of intellectual development	Intra Pupil	Inter pupil
Focus of curriculum intention	Adult life	Mainstream schol
Control over curriculum	Process based	Objectives based

These descriptions constitute ideal types and they do not necessarily exist in these pure forms. It is argued that these characteristics will tend to be associated with one another. The diagram presented above is a representation of some of the findings discussed in this thesis. The forms of organization studied lay on a continuum between the C-- F-- and C++ F++ types. However, it is possible to generate predictions about other forms of organization not available for testing in this thesis.

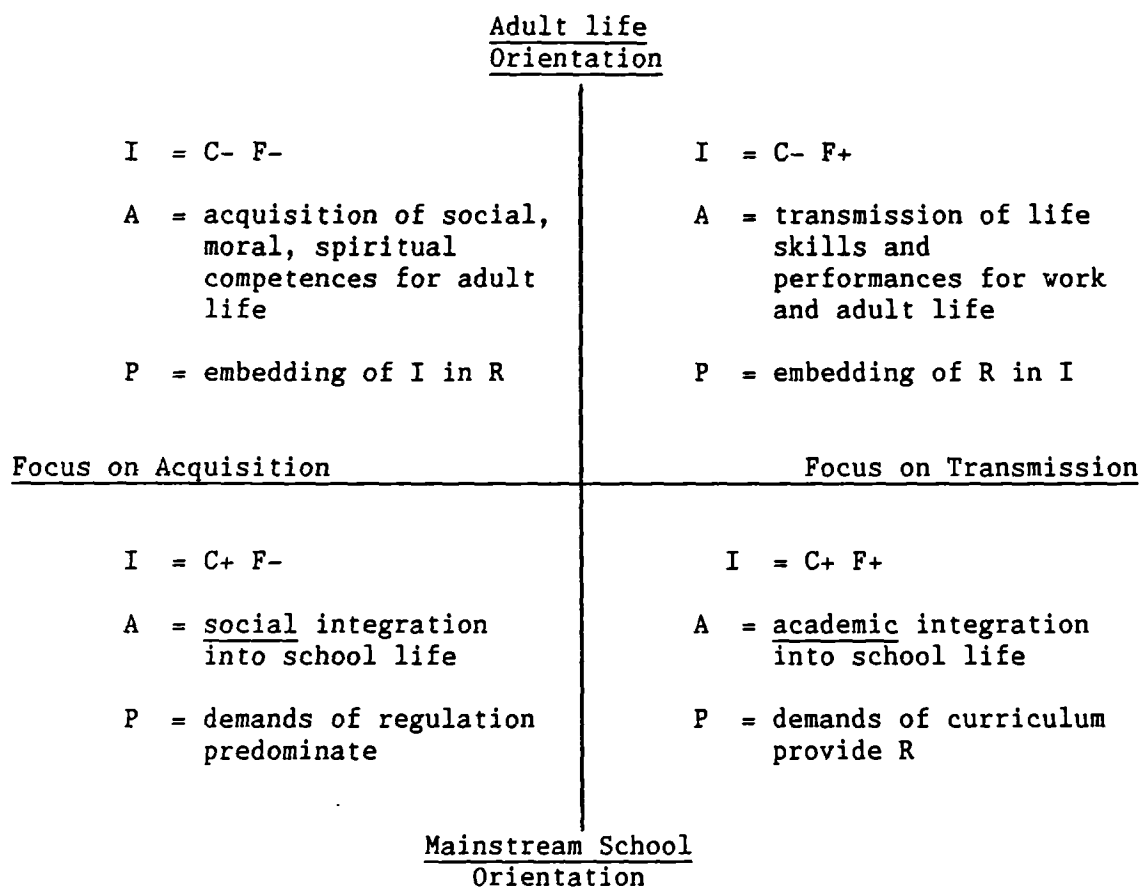
In a school oriented towards work and adult life, with a pedagogic focus on the process of transmission, life skills teaching may be expected. The aim of the pedagogic practice here would be to transmit

the life skills and performances required for work and adult life, in contrast to TC, where the focus was on acquisition and the aim was that children should acquire the social, moral and spiritual competences for community life. In TC the pedagogic practice involved the embedding of instructional practice in regulative practice, whereas when the focus is on the logic of transmission, as at CH, the pedagogic practice will involve the embedding of regulative practice in instructional practice. In a sense the instruction is about regulation, whereas in TC instructional practice provides the context in which the children are to acquire the competences of the regulative practice.

In a school with a pedagogic focus on a process of acquisition which is oriented towards mainstream school, then the aim may be the social integration of pupils into mainstream schooling. Here the instructional practice provides the arena for this social integration. The acquisition of social competences required in school becomes an aim. This contrasts with a school such as CH where the aim is academic integration into mainstream school. Here the pedagogic practice is one in which the demands of instructional practice serve to regulate the social behaviour of the pupils.

The full model would then be illustrated as follows:-

Special Education: a Model



I = Instructional Discourse

A = Aim

P = Pedagogic practice

R = Regulative practice

This model of special education generates topics for future investigation. The positions in the model not tested by this thesis await empirical investigation. This is not to assume that the positions investigated in this thesis have been exhaustively considered. Indeed, some of the empirical work was focussed on two of the four schools. These schools were used because they were judged to be extreme examples of the cline on which all four schools lay.

Future Developments

Regulative discourse itself requires much greater investigation. The realizations of regulative discourse in this thesis were only alluded to in the investigation of wall display. Thus only a partial view of educational transmissions has been gained. Some understanding of what was not transmitted in TC was gained, but little light was shed on what was transmitted.

A necessary level of investigation would be to compare the evaluative criteria of the schools with those held in the pupils' home settings. A specific example might be to examine the continuity or lack of continuity in the concepts of good art work held by the families of children from different social classes attending different forms of school.

The thesis also has implications for future developments in the school effectiveness research. Goodman, L (1985) is one of the very few articles that considers the place of the "effective schools movement" with respect to special education. It follows very much within the practice of Rutter et al (1979) and Galloway (1985) in identifying instructional variables that are thought to affect school achievement

positively and directly. The claim is that the following variables are dominant in the growing literature on effective schools.

"School leadership
academic engaged time
expectations for achievement
monitoring student performance
school climate
classroom management
direct instruction
parental involvement
small teacher/student ratio
consistency of curricular objectives and test content"
Goodman (1985) p.102

Goodman argues that "special education must become concerned about program effectiveness" , Goodman (1985) p.104. However, the analysis of the practice of special education does not enable the investigator to consider what Wertsch, Minick and Arns (1984) term the motives of the various activities that comprise the special educational field. In the language of the model the researcher should start with a description of the organizational and pedagogic practice in which the pupils, if not the teachers, are positioned. The model produced above implies that before the question "What is an effective school?" can be answered, the question "What do we want schools to do?" must be addressed. TC and CH are clearly involving children and teachers in very different forms of practice. They aim to position their pupils in different ways, through different practices and to acquire different competencies. Ultimately they have different intentions. This thesis did not generate techniques for measuring the regulative effects of educational transmission, although it alluded to their effects in the work on art display. It did, however, produce some evidence as to the instructional effects. The population of these special schools comprises many children who for one reason or another have what are

deemed social problems. The population does not simply consist of low I.Q children - it is of a complex constitution and involves children who are seen as deficient on both instructional and regulative criteria. Measuring school effectiveness on simply instructional criteria is not sufficient.

Thus on the one hand it is possible to conclude that if an authority wished to maintain special schools intending to reintegrate children, it would seem important that the internal values of classification in the special schools should be as like the mainstream school as possible. However, there is still the question "Which form of organization is most effective at reintegrating children?"

There have been a great number of studies of teacher behaviour (e.g. Hatton, 1985) and pupil behaviour (e.g. Harrison et al, 1981) in classrooms, usually somewhat crudely described as "open" and "closed". A major review of the identifying features of open classrooms involving a meta-analysis of 153 studies concluded that an active role for the child in learning with diagnostic evaluation, the use of manipulative materials and individualized instruction, can produce greater self-concept, creativity and positive attitude toward schooling, Giaconia and Hedges (1982). It is important to note that the classrooms which facilitated large effects on non-academic outcomes produced smaller average effects on academic achievement.

"the superior effects in self concept and creativity are obtained with the concomitant penalty of smaller effects on academic achievement."

Giaconia & Hedges (1982) p.600

However, comparative evaluations of different forms of pedagogic practice have tended, on the whole, to report the implications of

different forms of instructional practice using instructional criteria as measures. One of the relatively few attempts to extend this form of analysis has been published in the U.S.A.

Schweinhart et al (1986) report an evaluation of three preschool curriculum models in terms of behaviour at age fifteen of the children who attended these Headstart nurseries in Ypsilanti, Michigan. The comparison was between the High/Scope model, the Distar model and a model in the nursery school tradition. The Distar model involved a programmed learning approach in which the teacher initiated and the child responded. The High/Scope model involved teacher and child both planning, initiating activities and actively working together. The traditional nursery school pattern involved the child initiating and the teacher responding.

"The three preschool curriculum groups differed little in their patterns of IQ and school achievement over time. According to self-reports at age 15, the group that had attended the Distar preschool program engaged in twice as many delinquent acts as did the other two curriculum groups, including five times as many acts of property violence. The Distar group also reported relatively poor relations with their families, less participation in sports, fewer school job appointments, and less reaching out to others for help with personal problems. These findings, based on one study with a small sample, are by no means definitive; but they do suggest possible consequences of preschool curriculum models that ought to be considered."
Schweinhart et al (1986) p.15

Despite reservations about the measures used by Schweinhart et al, it would seem that they are reporting some effects of regulative discourse. Clearly self reporting is not an adequate measure; however, the indication of this research echoes the suggestion of this thesis that measures of regulative discourse must be developed if school effectiveness questions are to be answered on a broad base of understanding.

Conclusion

It has been shown that different forms of special school organization and pedagogic practice result in the differential realization of what appear to be shared competences in discrimination on the part of pupils. This thesis, therefore, has produced empirical evidence that accords with the guiding model. Further it has enabled a view of theoretical compatibility between psychological and sociological levels of analysis. The position of post-Vygotskian psychology as a psychological analogue of Bernstein's sociology has been shown, and attention has been drawn to the importance of what is effectively cross-cultural research at the level of forms of pedagogic practice. Research which ignores the cultural specific nature of educational competence and ignores the effects of the various aims within special education is likely to ignore essential elements of both ability and educational difficulty. Special educational practices are not ideologically neutral, they are driven by sets of assumptions and beliefs. It may well be that this thesis has generated an approach which may enable teachers in special schools to be more conscious of the explicit features of schooling and also the tacit assumptions that underlie its practice. Research may then be usefully directed to investigating the effects of these different positions when they are put into practice. Only then will researchers be in a position to investigate whether a particular school is enabling children to realize the competences required by particular forms of educational activity.

Coding rules for values of classification and framing used in
descriptions of project schools

External Values

Framing

Parents

- ++ No P.T.A. (Parent/Teacher Association)
No reporting system (to parents)
All contact with Headmaster apart from yearly open evenings
Little or no direct contact with staff
- + P.T.A.
No reporting system
Access to classrooms (and staff) only via Headmaster
- P.T.A.
Reporting system
Access to classrooms (and staff) via Headmaster
- P.T.A.
Reporting system
Open access to classrooms

Employers

- ++ No work experience scheme
No invited speakers
No influence on curriculum
- + No work experience scheme
Invited speakers
Some influence on curriculum
- Work experience scheme
Invited speakers
Influence on curriculum
- Work experience schemes
Invited speakers
Considerable influence on the curriculum

FE

- ++ No link courses
No liaison with FE courses
- + No link courses
Some liaison with FE courses
- Some link courses
Active liaison with FE courses
- Link courses
Considerable liaison with FE courses and joint
negotiation of content

Mainstream School

- ++ No intended curriculum links
No pastoral links
No integration
No intended similarity with mainstream
- + Few curriculum links
No pastoral links
Little serious intention of integration
Some similarity with mainstream
- Curriculum links
Some pastoral linkage
Some intention of reintegration
Similarity with mainstream
- Considerable curriculum compatibility
Full intention of integration

Subjects

Horizontal Classification

- C-- Integrated day
- C- Broad based related subjects
- C+ A range of grouped subjects
- C++ Subject based

Framing

- | | |
|-----|---|
| F-- | Control over content rests with acquirer |
| F- | Control over content mainly with acquirer but <u>influenced</u>
by transmitter
Themes chosen by teacher
Activity within themes chosen by child |
| F+ | Control over content mainly with transmitter but influenced
by <u>acquirer</u>
Themes/subjects and activities chosen by teacher
Sequencing and pacing may be left to child |
| F++ | Control over content rests with transmitter
Criteria always in hands of teacher |

Teachers

Horizontal Classification

- | | |
|-----|---|
| C-- | No subject specialist teachers
All generalists |
| C- | Some teachers specialize in a few subjects
Most teachers generalists |
| C+ | Some teachers generalists
Most teachers have a subject specialism |
| C++ | All teachers specialists |

Framing

- | | |
|----|--|
| F+ | Curriculum-led staffing |
| F- | Staff interests tend to influence curriculum |

Vertical Classification

- | | |
|-----|--|
| C++ | Clearly marked hierarchy within teaching body
Specific roles attached to promoted posts with stated
responsibilities and authority |
| C+ | Clear marking of managerial responsibility for sections
of the school (junior/senior)
Within each section less differentiation |
| C- | No clear publicly announced staff responsibilities
apart from the distinction between Headteacher and
assistant teachers |
| C-- | No distinction drawn between any teachers |

Framing

F++	Social relations within staff hierarchy imposed by grading of staff No individual teacher choice over what to teach	--
F+	Social relations of staff dominated by official status but with an amount of personal negotiation	
F--	Social relations of staff always personally negotiated Autonomy over choice of what to teach	

Classroom

Instructional Practice Context

C--	Children working in groups or as individuals and pursuing different tasks
C-	As above but similar tasks
C+	Classwork as individuals but different tasks
C++	Classwork as individuals but same tasks

Order

F++	Teachers control selection, criteria, sequencing and pacing of instruction
F+	Children have some influence on selection, criteria, sequencing and pacing Control largely in hands of teacher
F-	Teachers provide broad indications of areas in which children should be working
F--	Children control selection, sequencing and pacing of instruction

Regulative Practice

F++	The form of desired social behaviour is a direct concern of the classroom teacher. The teacher defines what is acceptable behaviour	
F+	Instructional practice demands conformity to social rules	,
F-	Instructional practice is designed to allow for the acquisition of specific moral competences	
F--	The children are supposed to acquire social and moral competence with little or no constraint either from direct instruction or arising from instructional practice.	

COUNTY COUNCIL

Headmaster:

SCHOOL,
LANE,

Telephone:

TRANSCRIPT OF DESCRIPTION OF SCHOOL PHILOSOPHY
PROVIDED BY HEADMASTER TO H.D. DANIELS (with special reference
to school tone and ethos). 21.5.86

The issue of transfer of training in children with moderate learning difficulties is of central concern in this school. The question too often ignored in this area of the educational system is just what it is that transfers. The answer provided in this community is in terms of spiritual enhancement. Fitness for life after school is made possible for our children through encouraging the development of the characteristic skills of effective human social interaction. This is not to say that these skills can be articulated directly they are acquired by children during the course of their development into integrated people. The process is facilitated in a number of ways, e.g. swimming offers the children the experience of exploring their own capacity for movement and of developing neurological/perceptual skills which are the basis of a broad maturational platform on which all learning is built.

The most important aspect of this aquatic experience is not necessarily the acquisition of physical skills; rather is it the personal, human and spiritual development that is facilitated. This is not to say that the school does not value the acquisition of specific skills and knowledge, but rather that it is more concerned with attitudes and values developed during this process. Thus the major aims of the school are not formulated in terms of the technocratic assembly of skills and items of knowledge but in terms of the development of a sensitized human being who can enjoy the world as well as operate in it.

Education, as distinct from training, should crucially enable the child to develop a sense of purpose. The individual with an integrated personality and a clear sense of purpose and place in life will be uniquely sustained through the many difficulties that adult life involves. The acquisition of this sense of purpose is not open to timetabling in the form of "social skills", nor is it possible to develop as a "panic" measure during the last few years or months of schooling. The process begins when the child enters the school and continues throughout.

The philosophy of the school is influenced by the work of Steiner and Montessori in the field of education and the Arts and Crafts movement. The aim is to create an aesthetics of personality development akin to the concept of fitness for purpose used by Morris et al in the rejection of Victorian excess.

The necessary parameters of social control required by educational communities create the situation within which children should be encouraged to be creative and develop. The accretion of a goal seeking sense of purpose within the child enables it to become "the workman that needeth not to be ashamed". Shame only comes with the loss of dignity; moral and spiritual fortitude prevent this happening.

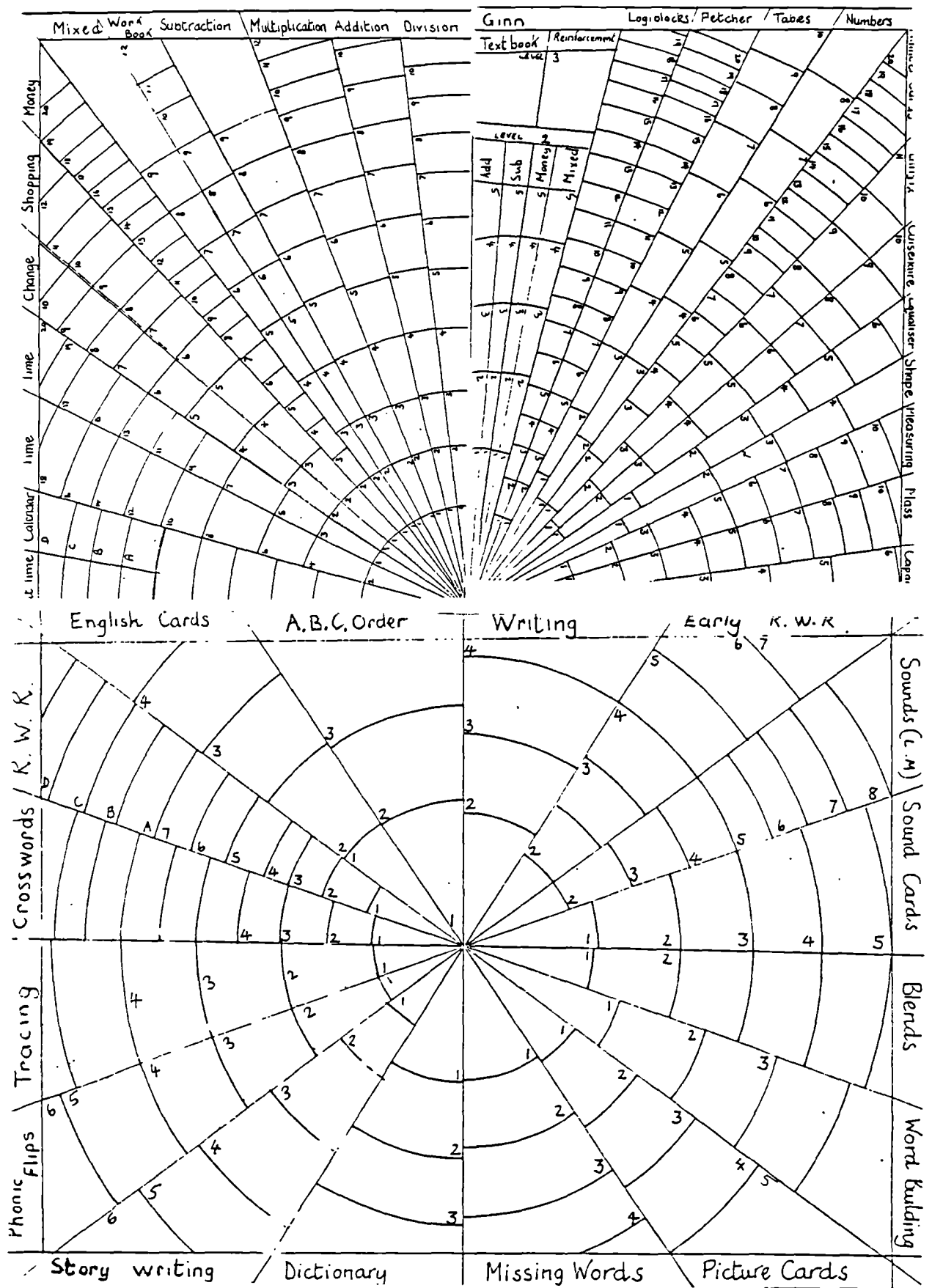
Many schools consider it possible to offer a structured list of intended learning. Structured teaching ignores the essential nutrient of the educational diet - creativity. Inert rigid curriculum objectives are constructed within a mechanistic image of man; this feature is rejected by this school in favour of a creative spiritual image.

Within this framework, teaching which seeks to abstract essential learnings, such as the use of Dienes blocks in the teaching of mathematics or life skills teaching, can only create inert, sterile experiences that are essentially irrelevant and outside the children's apprehension, if their wisdom is our goal. The implication here is that the encounters are less than real, and because of this they are, therefore, significantly not integrated into the youngsters' nature. The opportunity for conceptualisation of the information is then lost. This school argues that the relevant skills and knowledge for work will be acquired in work; the school has the responsibility for ensuring that the child possesses the requisite sense of personal integration which enables him to discharge his function as workman.

The characteristics of concern here are those of

1. Self reliance
2. Self confidence
3. Awareness of one's own abilities and limitations
4. Respect for views of others
5. Courtesy
6. Punctuality
7. Good work habits

These are the characteristics which a child should take with him when he leaves. The teaching of skills and knowledge provide a setting for the acquisition of these characteristics. An educational programme gains its credibility through the amount of stimulation, of wonder and excitement it generates in children. An active purposeful education is the only one which can ensure the achievement of this sense of reality.



Appendix 4

- | | | | |
|----|-----------------------|---|---|
| 1. | WATER | : | CLEAR FLUID LIQUID WET (SCIENCE) M
BLUE RUSHING SPLASHING FLOWING (ARTS) A |
| 2. | GLASS BEAKER | : | CLEAR ROUNDED SMOOTH CONTAINER (M)
SPARKLY DELICATE FRAGILE SLIPPERY (A) |
| 3. | FLOWER | : | PLANT STEMS LEAVES PETALS (M)
DELICATE COLOURFUL FRESH ATTRACTIVE (A) |
| 4. | PIECE OF TURNED METAL | : | METAL RUSTED TURNED* POINTED (M)
SHINY UGLY DIRTY DANGEROUS (A) |
| 5. | BIRD | : | BEAK FEATHERS WINGS LEGS (M)
FLUTTERS COLOURFUL FREE CHIRPS (A) |
| 6. | SEASHELL | : | SPIRAL SHELL HOLLOW ANIMAL (M)
SPIKEY ROUGH STRIPED SHINY (A) |
| 7. | LION | : | HARDWOOD ANIMAL TOY CARVED (M)
STRONG FIERCE PROWLING POWERFUL (A) |
| 8. | FIRE | : | HEAT SMELLS FLAMES DANGEROUS (M)
BLAZING SMOULDERING BEAUTIFUL GLOWING (A) |

Details of Picture Tasks (all in colour)

1. A moonscape.
2. A dragster: detail of rear section.
3. A shoal of dolphins.
4. A rocket launch.
5. A swimmer doing butterfly.
6. Wildflowers.
7. Ducks flying against the background of a sunset.
8. A hot air balloon.
9. A tattooist working.
10. A coal fire.

18th May 1985

Differences between TC and CH

- DB In four days we learnt something.
I've learnt how to blend words and we do playbook/paybook.
- HD What's that?
- DB You write in the name and you write in what date it's going to be on Saturday and that and you got lots more things to choose on a board and lots more things to do.
- HD What's the board?
- DB It's a like - it's got all things you can do on it and you can choose different things - there's about 24 things on there.
- DB Well I miss friends.
- HD What about how the children behave?
- DB In TC they're bad - very bad. The teachers can't really control the kids.
- HD Is there anything else that's different?
- DB They teach all different things in a week - not like TC. They teach craft, work, how to use machines properly and doing all blending the words so you get them right.
- At TC they didn't do that they just used to say - "What does that say" - not like b-a-t.
- HD Which do you think is best?
- DB Blending the words.
- HD Why?
- DB Cos if you don't. If you get the words and it helps you put them together.
- HD What about how the children behave here?
- DB The teachers quite good here in controlling.
- HD What about when there aren't any teachers around?
- DB The children here don't muck around as much.

HD = INTERVIEWER

DB = PUPIL

HD Can we go back to the actual work here.

DB The pottery - we didn't used to do cooking well we did but not on Wednesdays. They used to over do it at TC.

HD What do you mean by over do it?

DB They didn't used to give it a rest.

HD Did you do it every day?

DB No.

HD How often?

DB Its all once a week - but the kids used to say they wanted to do it and we would.

Someone said they wanted to do cooking or gardening in the morning so they could do it, so the Teacher let them - so they used to get off work.

HD What was work?

DB It was sums and that - there were only two things you could do at that school - it was sums and English - and something else - a piece of card and write about this animal - a bit boring.

DB You do much more reading here (CH).
We move from teacher to teacher here - so everyone knows and gets a bit of something different and it's quite exciting.

I like moving from teacher to teacher cos we didn't used to do it at TC.

HD Does moving from teacher to teacher make anything difficult?

DB Yeah, learning their names - it's embarrassing calling them miss. Yes - and you can't really get used to it - it's a bit hard - especially at times - knowing what times - doing sums.

"Don't want to go back!"

Mr Daniels read this out to me and it's what I said.

HD What are the differences in the schools now then?

DB Getting on at reading here - 'cos at the other school they didn't seem to care and didn't help you a lot.

HD How did you know they didn't care?

DB Well they used to just give you a book and say read it. They didn't help you - they just told you the word - they do the sounds of the letter here so you can get the word.

HD What about the lessons?

DB There is more things to choose here on your own board. There is more things every week.

HD What can you do?

DB Writing work, spellings, comprehension, gymnasts, addition, subtraction - lots more things.

HD Like?

DB Lots.

HD How many teachers teach you? Who are they?

DB Mr. Mason for craft, Mrs Ward for cooking, Miss Brain does lessons and PE and one more - Mrs Something - I can't remember - we have her today.

HD Is it good to see a lot of teachers?

DB Yes.

HD Is there anything difficult about it?

DB Not really when you get to know them.

HD What do you mean by "get to know"?

DB Get to know they're nice to you. All you do is more class. It's different to being stuck in the same class all day. It's different surroundings.

HD What's different about the surroundings?

DB Different person - different teaching - something to look forward to.

HD What do you mean different teaching?

DB Different things to do - makes it more exciting.

HD Do the teachers teach differently?

DB Yes.

HD Can you explain how?

DB Woodwork, cooking, sewing.

HD Apart from the subjects.

DB Different face, different person.

HD Can you tell one lesson from another?

DB Yes, by the machines and stuff. There's different surroundings everywhere.

HD What good bits do you miss about TC?

DB Mostly the friends and the Headmaster. He was nice if you get along with him. He didn't have much organising to do - people being naughty is not his fault and that.

HD What do you mean by organising?

DB Cos people keep being naughty and stops him doing things. They should be more strict - cos people get away with things.

HD Do you mean the Headmaster spent a lot of time telling people off instead of organising things for you to do.

DB Yes. It wasn't really his fault. He kept trying to make it a nice world but the kids kept messing it up for the other kids.

HD So what happens here?

DB They're more strict - they get things organised and send them to Mr. Cope.

HD How do you think TC should change?

DB They need more the Headmaster should have a helper to help him.

HD And...

DB Get em frightened - expelled.

HD What should change about CH?

DB Nothing.

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